

USSR

UDC 576.809.53

VOYTOVICH, YA. V., GRIKHUTNIKOVA, G. P., MIKHAYLOV, V. I., and POPOVAREV, P. I., Institute of Physics, Siberian Branch, Academy of Sciences USSR

"Autotrophic Culturing of Hydrogen-Oxidizing Bacteria in Continuous Culture"

Moscow, Prikladnaya Biokhimiya i Mikrobiologiya, Vol 7, No 2, Mar/Apr 71, pp 183-188

Abstract: Autotrophic assimilation of CO_2 with simultaneous regeneration of O_2 , H_2O , and some food has been discussed in the literature. Use for this purpose of H_2 bacteria capable of utilizing CO_2 as a source of C while deriving energy from the oxidation of H_2 is preferable to that of photo-autotrophs, because less energy is expended per unit amount of synthesized biomass. Hydrogenomonas eutropha Z-1 were cultured continuously in a laboratory vessel with a capacity of 5-7 l. and was filled up to 2 l. A solution containing (in g/l.) Na_2HPO_4 1, KH_2PO_4 3, MgSO_4 0.1, CaCl_2 0.02, Fe citrate 0.25 was used, to which 10% urea and the trace elements B, Co, Cu, Mn, Zn, Mo, and Ni in the form of a Hoagland solution has been added. A mixture of CO_2 , O_2 , and H_2 was 1/2

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VOYTOVICH, YA. V., et al., Prikladnaya Biokhimiya i Mikrobiologiya, Vol 7, No 2, Mar/Feb 71, pp 183-188

continuously pumped in. Automatic control based on continuous measurement of optical density was applied. When the optical density reached a certain level, a part of the culture was withdrawn and fresh nutrient medium added. The composition of the gas discharged from the apparatus was determined. The intensity of the process was determined on the basis of the hourly rate of growth and the amount of dry biomass produced per day per liter. On the basis of the data obtained, it was calculated that for an installation with a mass transfer of H_2 up to 25 ml/min per 1 g effective bio mass, the maximum efficiency (maximum production of biomass per day per liter) will result when the gas mixture contains 2-3% CO , 15-30% O_2 , 30-65% H_2 , depending on the biomass concentration. The maximum rate of growth obtained was 0.2/hr. With increasing biomass concentrations, the rate of growth decreased, while the efficiency of the process increased linearly. Although culturing was conducted under non-sterile conditions, contamination of the culture with extraneous species did not exceed 1% under optimum intensive growth conditions. The apparatus was run for 105 days with continuous periods of operation amounting to 11 days.

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USSR

UDC: 681.327.11

VAL'KOV, V. M., ABATUROV, S. S., MIKHAYLOV, V. I., VORONIN, V. F.

"A Device for Data Output by Means of Speech"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 22, 1970, Soviet Patent No 275520, Class 42, Filed 3 April 1969, p 117

Abstract: This Author's Certificate introduces a device for data output by means of speech. The device contains a memory unit connected to an electric motor, an arbitrary word-sampling circuit, and a playback amplifier connected to a loudspeaker. As a distinguishing feature of the patent, the device is simplified by making the memory unit in the form of magnetic drums of different diameters and connecting the outputs of the readout head units through commutators on the different steps to a balancer whose output is connected to the playback amplifier.

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UDC: 621.385.64

LEVIN, G. Ya., BAN'KOVSKIY, S. P., and MINHAYLOV, V. I.

"Magnetron Triode With Lens Optics in the Static Mode"

Moscow, Radiotekhnika i elektronika, No 8, 1972, pp 1653-1659

Abstract: In an earlier paper published as an Author's Certificate by the authors named above (No 286781, 1970), a proposal was made to provide the magnetron with lens optics through the use of additional electrodes, thus improving its efficiency in radar, telemetry, and communications. The present paper offers some of the results connected with the development of that device, contains a cutaway view of it, and indicates how it may be used in practice. The advantage of the tube is that, through its lens optics feature, control of the electron beam can be realized without power expenditure and without hindering the beam by metallic obstacles. The electric field is heterogeneous along the axis and has a complex pattern. Basic dimensions of two such magnetron types are given in a table, and curves for static operation of the tube are plotted.

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UDC: 621.385.64.001.5

LEVIN, G. Ya., BAN'KOVSKIY, S. P., and MIKHAYLOV, V. I.

"Generator Mode of the Magnetron Triode With Lens Optics"

Moscow, Radiotekhnika i elektronika, No 8, 1972, pp 1660-1662

Abstract: This article gives the results of investigations into the oscillatory mode of the magnetron triode with lens optics, description of which is given in a paper published in the same issue of the journal noted above (pp 1653-1659). A table in the present paper presents the dimensions of the interaction space of one such tube designed to operate on 1.5 kW and generate a wavelength of 1.4 cm. Curves are plotted for the generated power frequency, the frequency, the anode current, and the current in the control electrode, as functions of the control electrode voltage, and an explanation of the peculiarities in these curves is made. A detailed examination is conducted of how the generated oscillatory power varies with the control electrode voltage. Experiments conducted with the model here described showed that, in the shortwave end of the centimeter range, a modulation frequency differing from the carrier frequency by an order of two to three was possible. The authors thank A. Ya. Usikov for his advice.

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USSR

UDC: 8.74

AROLOVICH, V. S., MIKHALYOV, V. M.

"Algorithm for Diagnosis of Dead Ends"

Zh. vychisl. mat. i mat. fiz., 1972, 12, No 6, pp 1543-1553
(from RZh-Kibernetika, No 5, May 73, abstract No 5V783 by
the authors)

Translation: An analysis is made of dead ends, i. e. situations in which some of the problems solved on a computer in a multiprogram mode cannot continue their solution due to mutual dependences. It is proved that if the dependences of the problems are represented by a system of equations and their left parts are multiplied, then the problems which fall into a dead end can be determined from the form of the resultant product. In terms of a matrix constructed from this system of equations, an algorithm is formulated which enables finding the minimum sets of problems whose completion by special means, or elimination from the number of solved problems does away with a dead end in the system. The presentation is illustrated by examples.

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MIKHAYLOV, V. M.

SPRS 56, 499
14 JULY 72

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For this purpose an experiment was conducted in which the subjects for a period of ten days were exposed in a pressure chamber with a hypoxic mixture containing 5% O₂ (PO₂ = 400 mm Hg). In order to prevent a negative effect of restricted mobility on the body, twice a day, for 10 minutes each day, the subjects performed a complex of physical exercises. A day before and a day after ending the experiment a test was conducted with a maximum physical load using an electric bicycle-type ergometer with a rhythm of rotation of the pedals of 60-70 rpm. The work began with 400 kgm/min (100 X) and was discretely increased by 200 kgm each succeeding minute until the subject was completely fatigued and it was impossible to continue further work. A polyamplitude record was made during test performance to show the systolic phases of the left ventricle; a "Mingograf-1" instrument was

used for the recording. In space conditions is the optimum selection and physiological adaptation of the organism to the atmosphere within spacecraft cabins. Among the phenomena existing in different variants of atmospheres and which may prove promising and which may find practical application is an increased content of oxygen in the breathing air. This reduces the probability of the appearance of hypoxia, reduces the probability of the appearance of hypoxia, tolerance to some external factors, including exposure on body physical exercises. Despite the great number of studies made in this field by Soviet and foreign researchers, nevertheless too little study has been made of the advisable time for human exposure in an atmosphere with an increased oxygen content and its concentration in the breathed air.

Article by V. M. Mikhaylov, Senior Researcher, Institute of Physiology and Pathology, Leningrad, 1971, pp. 100-107.

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UDC 612.766.1-06:613.24

USSR

KAKURIN, L. I., PURAKHIN, YU. N., GEORGYEVSKIY, V. S., KATKOVSKIY, B. S.,
VYSOTSKIY, V. G., CHEREPAKHIN, M. A., USHAKOV, A. S., LARICHEVA, K. A.,
PETUKHOV, B. N., IVANOV, P. P., MACHINSKIY, G. V., MIKHAYLOV, V. M., POSETOV,
YU. D., and SMIRNOVA, G. I.

"Locomotor Activity of Man Kept on a Reduced Food Ration"

Moscow, Voprosy Pitaniya, No 3, May/Jun 1971, pp 7-12

Abstract: The combination of drastic limitation in locomotor activity with reduction to a low-calorie diet (down to basal metabolism) was studied in six healthy men 24-35 years of age who were confined to bed for a number of days under conditions of hypokinesia. Pronounced changes were observed in the functions of the cardiovascular, respiratory, nervous, and muscular systems of the body. Tabular data were collected on physiological tremor of closed eyes, maximum physical work fitness, muscle tone dynamics, and the cardiovascular system in the orthostatic position. Asthenia of the nervous system and a slowing down of the biopotentials in the cerebral cortex were observed. Likewise, it was noted that hypokinesia caused disturbances in body coordination and statics. The pulse rate increased and the arterial pulse pressure was

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KAKURIN, L. I., Voprosy Pitaniya, No 3, May/Jun 1971, pp 7-12

reduced in persons subjected to the orthostatic test. Three persons reached a state of near collapse. These changes were attributed to a significant reduction in the compensating actions of the blood circulation. It was found that after about 10 days, the observed changes gradually decreased in the test subjects. This regression was largely of a functional character and was linked to the "detraining" of the various systems of the body. The authors believe that the severity of the changes in the body functions is directly proportional to the degree of hyperkinesia to which the tested persons were subjected. It is proposed that maintenance of homeostasis requires a certain level of motor activity even with a low-calorie ration.

2/2

1/2 012 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--OBTAINING CYCLIC VOLT AMPERE CHARACTERISTICS ON A TSLA
OSCILLOPolarOGRAPH -U-
AUTHOR-(02)-MIKHAYLOV, V.N., KISELEV, B.A.
COUNTRY OF INFO--USSR
SOURCE--ZAVOD. LAB. 1970, 36(2), 162-3
DATE PUBLISHED-----70
SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR., PHYSICS
TOPIC TAGS--OSCILLOPolarOGRAPH, VOLT AMPERE CHARACTERISTIC, OXIDATION
REDUCTION REACTION, DROPPING MERCURY ELECTRODE/(U)TSLA OSCILLOPolarOGRAPH
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAmE--1989/0918 STEP NO--UR/0032/TQ/036/002/0162/0163
CIRC ACCESSION NO--AP0107447
UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0107447

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. AUXILIARY ELECTRONIC EQUIPMENT FOR
THE OSCILLOPOLAROGRAPH TSLA IS DESCRIBED IN DETAIL. THE IMPROVED
OSCILLOPOLAROGRAPH IS SUITABLE FOR STUDYING BOTH OXIDN. AND REDN.
PROCESSES ON DROPPING HG ELECTRODE. FACILITY: INST. FOTOSIN.,
PUSHKINO ON OKA, USSR.

UNCLASSIFIED

1/2 027 UNCLASSIFIED PROCESSING DATE--20MGV7C
TITLE--APPLICATION OF VOLTERRA'S METHOD TO THE SOLUTION OF MIXED BOUNDARY
VALUE PROBLEMS FOR THE WAVE EQUATION -U-
AUTHOR-(02)-MIKHAYLOV, V.N., UTKIN, A.I.

COUNTRY OF INFO--USSR

SOURCE--AKADEMIYA NAUK SSSR, IZVESTIYA, MEKHANIKA ZHIKOSTI I GAZA,
JAN.-FEB. 1970, P. 143-147.
DATE PUBLISHED-----70

SUBJECT AREAS--MATHEMATICAL SCIENCES, PHYSICS

TOPIC TAGS--VOLTERRA EQUATION, VOLTERRA OPERATOR, CAUCHY PROBLEM, WAVE
EQUATION, MIXED BOUNDARY VALUE PROBLEM, AERODYNAMICS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1992/1454

STEP NO--NR/0421/TO/000/000/0143/0147

CIRC ACCESSION NO--AP0112448

UNCLASSIFIED

2/2 027

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0112448
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. ANALYSIS SHOWING THAT BY FORMAL APPLICATION OF VOLTERRA'S FORMULA DESCRIBING THE SOLUTION OF THE CAUCHY PROBLEM FOR THE WAVE EQUATION WITH THREE INDEPENDENT VARIABLES TO PROBLEMS IN AERODYNAMICS (SUCH AS FLOWS PAST WINGS AND THE INTERFERENCE BETWEEN WINGS AND BODIES OF REVOLUTION) MAKES IT POSSIBLE TO REDUCE THREE DIMENSIONAL MIXED BOUNDARY VALUE PROBLEMS FOR THE WAVE EQUATION TO TWO DIMENSIONAL INTEGRODIFFERENTIAL EQUATIONS AT THE SURFACE. IN THE CASE WHERE THE SURFACE HAS A SHARP BEND, THE VOLTERRA FORMULA IS NO LONGER VALID. A MODIFICATION OF THE FORMULA TO INCLUDE THE CASE OF A SHARP BEND IS PRESENTED. THE DISCREPANCY BETWEEN THE ACTUAL VALIDITY REGION OF THE WAVE EQUATION AND THAT EMPLOYED IN THE VOLTERRA METHOD IS ANALYZED.

UNCLASSIFIED

Glass and Ceramics

UDC 666.12.01.15.000.1

USSR

DOYNIKOV, L. I., KIRILYANOV, V. K., and GILLOVA, G. M., Leningrad State University
Imeni A. A. Zhdanov

"The Thermal Stability of $AsSe_xI_y$ Glasses"

Moscow, Izvestiya Akademi Nauk SSSR, Neorganicheskaya Khimiya, Vol. 6, No. 6,
Jun 70, pp 1177-1178

Abstract: An investigation was made of the microhardness and thermal stability of $AsSe_xI_y$ glass-like alloys with $x = 0.3; 1.0; 1.3; 2.5; 4.0; 5.0; \text{ and } 10.0$. The alloys were synthesized by vibration vacuum melting at 710°C with subsequent air hardening. The introduction of iodine lowered considerably the microhardness and thermal stability of the investigated alloys. The effect of iodine depends on the ratio of the As and Se content, with alloys in which $Se/As = 1.5$ possessing the maximum hardness.

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Therapy

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BELOKUROV, Yu. N., KAMENNYI, A. N., MORMYTKO, A. S. and MIKHAYLOV, V. P.,
Faculty Surgical Clinic, Yaroslavl Medical Institute

"Treatment of Anaerobic Infection with Hyperbaric Oxygenation"

Leningrad, Vestnik Khirurgii, Vol 105, No 10, Oct 70, pp 137-138

Translation: We have successfully used the method of hyperbaric oxygenation for the treatment of three patients with anaerobic infection of the extremities, spreading over the trunk.

In all three patients, the diagnosis was confirmed bacteriologically, and X-ray pictures showed gas in soft tissues. The treatment was conducted in a chamber designed by Yu. N. Belokurov. During the treatment sessions, the electrocardiogram, respiratory frequency, rheovasogram, and blood pO_2 of the patient were recorded. Each oxybarotherapeutic session lasted 2-3 hours, and the oxygen partial pressure was raised to a maximum of 2.8 atm. Each patient underwent from four to six of these treatment sessions.

We observed no complications from this treatment method. Detoxification therapy was simultaneously applied and consisted of administering antigangrene serum (up to 300,000 units per day), protein and electrolyte solutions, and

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BELOKUROV, Yu. N., et al., Vestnik Khirurgii, Vol 105, No 10, Oct 70,
pp 137-138

antibiotics. Even after the second therapeutic session, a marked clinical effect was observed, with disappearance of signs of gas gangrene in two patients.

The method was successful even when radical surgery was impossible due to the spreading of the process over the trunk.

1. Patient Shch, 35 years old. Delivered to the hospital on 23 January 1968, 6 hours after trauma sustained at work. Diagnosis: Open fracture of the pelvis; rupture of the ampullar portion of the rectum and the urethra; tear wound on right buttock; and third-degree shock.

The patient was brought out of shock, a suprapubic fistula of the urinary bladder was made, and the wounds were treated surgically without sutures. Forty-four hours after the trauma, the patient's temperature was 40°C, a swelling of the right buttock developed with bronze-cyanotic discoloration of the skin, and the wounds discharged an exudate of dirt and blood. Palpation revealed crepitation in the area of the right buttock and the perineum. A diagnosis of gas and edematous form of anaerobic infection was made. Skin and fascia cuts were made in the buttock and perineum, and antigangrene serum up to 150,000 Au per day was administered. On 26 January, the edema and gas spread

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BELOKUROV, Yu. N., et al., Vestnik Khirurgii, Vol 105, No 10, Oct 70,
pp 137-138

over the trunk, the wounds were necrotic, and the protruding muscles acquired a gray color. The patient was passive; pulse rate was 120 beats per minute. Sixty-eight hours after the beginning of the disease, the patient was sent to our clinic for oxybarotherapy. The first treatment was given on 26 January; it lasted 2.5 hours, with oxygen pressure in the chamber up to 2 atm. On 27 January, the patient's temperature was subfebrile, he was conscious, the hip swelling had diminished 4 cm, and the tissue around the wounds acquired a viable color. On the same day, the second oxybarotherapeutic treatment was given for 3 hours, with a pressure of 2.8 atm. After that, the bronze-cyanotic discoloration of the skin disappeared, the wounds exuded a moderate amount of a serous fluid, and the muscles became pink and were no longer protruding. The size of the right hip rapidly diminished to that of the healthy hip, and crepitation disappeared. The temperature was subfebrile, and the signs of gas gangrene were gone.

2. Patient R., 22 years old. On 8 March 1969, the patient sustained fourth-degree electrical burns on both wrists and forearms from 10,000 volt alternating current. On 13 March, he was delivered in serious condition to the Vologotskaya Oblast Hospital, where the following diagnosis was made:
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BELOKUROV, Yu. N., et al., Vestnik Khirurgii, Vol 105, No 10, Oct 70, pp 137-138

electrotrauma complicated by anaerobic infection spreading over the ventral surface of the neck and chest.

On 14 March, the patient was sent to our clinic in very serious condition, with a gray-earthly face color, icteric scleras, pulse of 120, and a temperature of 39.2°C. There are necrosis of both wrists and forearms up to the middle third. On the left side, the swelling and hyperemia spread to the lateral surface of the neck and over the subclavicular area. There was distinct crepitation to palpation. X-ray pictures revealed gas. Bacteriological analysis of the wound exudate established the presence of *C. perfringens* and hemolytic *Staphylococcus aureus*.

The patient was placed in the barochamber for four hours at a pressure of 2.5 atm. Within 24 hours, the patient's condition improved considerably, his temperature fell to subfebrile, swelling of the limbs diminished, and crepitation disappeared. On the following days, two more oxybarotherapeutic treatments were given. On 17 March, necrectomy was performed in the middle third of the left arm and the upper third of the right forearm. After surgery, the patient was again placed in the barochamber. On the following days, the patient improved rapidly. His temperature was subfebrile, and

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the stumps were gradually cleared of necrotic areas and pus and became covered with granulations and epithelization from the edges. The patient recovered and, on 20 April, was transferred to the Vologotskaya Onkologicheskaya Hospital for further treatment.

3. Patient D., 38 years old. On 15 April 1969, the patient had an automobile accident and sustained an open fracture in the middle third of the right thigh and a laceration of the wall of the femoral artery. He was delivered to the district hospital in a state of shock. After the shock was treated, an osteosynthesis was performed on his right thigh, and his femoral artery was sutured. On the fifth day, the edematous and gaseous form of anaerobic infection developed in the thigh. Longitudinal cuts were made in the thigh, and the patient was sent to our clinic.

At admission on 20 April, he was in serious condition; his skin and scleras were icteric, his pulse was 100 beats per minute, his right thigh was edematous and the swelling was spreading over the shank, and the skin on the thigh had a bronze hue extending over the inguinal fold. A serous pus was discharging from the wound, and the muscles had a "cooked" color. Gas was emitted upon palpation and application of pressure. Bacteriological analysis

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BELOKUROV, Yu. N., et al., Vestnik Khirurgii, Vol 105, No 10, Oct 70, pp 137-138

of the wound content revealed the presence of *C. perfringens*.

On 20 and 21 April, two oxybarotherapeutic treatments were administered, each lasting 3 hours at a pressure of 2.8 atm. The patient's general condition improved, his temperature was subfebrile, and the clinical signs of gas gangrene disappeared. On 21 April there was a sudden massive hemorrhage from the wound. The patient's condition markedly deteriorated, and his pulse rose to 130 beats per minute. The hemorrhage was stopped by conventional methods. On 24 April, as a result of an ischemic gangrene of the extremity, the patient's leg was amputated at the level of the middle third of the thigh. After surgery the patient was given four more oxybarotherapeutic treatments which considerably improved his general condition. The patient recovered.

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USSR

UDC 537.312.62:549.2

SAVITSKIY, Ye. M., BARON, V. V., and MIKHAYLOV, V. P.

"Structure and Superconducting Properties of Alloys Based on the Compound Nb_3Sn Produced by Substitution of Phases in the Solid-Liquid State"

Problemy Sverkhprovodyashchikh Materialov [Problems of Superconducting Materials — Collection of Works], Moscow, Nauka Press, 1970, pp 112-119

Translation: The possibility is established of replacing the low-melting phase in $Nb-Sn$ alloys with other superconducting alloys (Pb , $Pb-Sb$, $Pb-Bi$) with transition temperatures from 7.1 to 8.2°K. The influence of structure on superconducting properties is demonstrated; alloys are produced with significant ductility and capability for plastic deformation.

The possibility is established of using the method of replacement of the low melting component for alloys of all systems consisting of refractory and low melting phases having the necessary crystallization temperature interval.
5 figures; 1 table; 15 biblio. refs.

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Acc. Nr: **A70045128**

Abstracting Service: **570**
INTERNAT. AEROSPACE ABST.

Ref. Code:
UR 0020

M

A70-23167 : Stabilization of the solution to the Cauchy problem for the heat-conduction equation (O stabilizatsii resheniya zadachi Koshi dlia uravneniya teploprovodnosti). V. P. ~~Alkhov~~ **Nov**
(Akademiia Nauk SSSR, Matematicheskii Institut, Moskva, USSR).
Akademiia Nauk SSSR, Doklady, vol. 190, Jan. 1, 1970, p. 30-41. 5 refs. In Russian.

Derivation of the necessary and sufficient conditions for the solution to the Cauchy problem for the heat-conduction equation to be stabilized when t approaches infinity. A number of theorems and lemmas regarding the existence of a limit which is uniform with respect to x and the existence of a limit which is uniform on a compact set are proved as part of this derivation.

A.B.K.

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REEL/FRAME
19780028

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USSR

UDC 621.396.6-181.5

LEN'DOROVICH, P. N., LEVY, M. M., ~~et al.~~, ~~et al.~~, ~~et al.~~

"Automating the Design Planning of Large Functional Modules"

Izv. Leningr. elekt. in-za (Inst. of the Leningrad Electrical Engineering Institute), 1971, vol. 92, pp. 37-40 (USSR Engng. Design, No 7, Jul 71, Abstract No 71276)

Translation: The authors consider the design of large functional modules containing more than 100 simple microcircuits arranged on a circuitization substrate and interconnected by at least two layers of connections. A principal difficulty is breaking down the general circuit into complexes of microcircuits, arranging them, and making the wiring hook-ups. A system is described for designing large functional modules with the use of digital computers of the "Mark-32" type. This system is made up of a number of programs including a program for preliminary breakdown of the circuit, a program for making up sets of substrates for the simple microcircuits, a program for arranging these sets, etc. Bibliography of two titles. U. S.

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USSR

UDC 547.539.2

YAGUPOL'SLIY, L. M., MIKHAYLOV, V. S., and MATYUSHECHEVA, G. I.,
Institute of Organic Chemistry, Kiev, Academy of Sciences Ukrainian
SSR

"Investigation of the Reaction Between Carboxylic Acid Hydrazides
and Phosphorus Pentachloride"

Leningrad, Zhurnal Organicheskoy Khimii, Vol 6, No 8, Aug 70,
pp 1648-1651

Abstract: Benzoic acid hydrazide is interacted with phosphorus pentachloride to give a mixture of benzal chloride and benzotrichloride. Electron donor substituents in the para-position promote the formation of benzal chloride derivatives, while electron acceptor substituents increase the concentration of benzotrichloride derivatives. Substituents in the meta-position have almost no effect on the ratio of dichloromethyl and trichloromethyl compounds in the mixture of reaction products. When substituents are present in the ortho-position, it is the size of the substituent rather than its nature which has a decisive significance. Interaction of ortho-substituted benzoic acid hydrazides with phosphorus pentachloride in polar solvents leads to synthesis of practically pure benzal chloride derivatives.

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1/2 027 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--DETERMINATION OF TRACE IMPURITIES OF HEAVY METALS ARISING DURING
THE ELECTROLYSIS OF SODIUM CHLORIDE WITH A MERCURY CATHODE -U-
AUTHOR--(04)--DEMYANCHUK, A.S., MIKHAYLOV, V.S., VOLNITSKIY, G.P., SIRENKO,
I.I.
COUNTRY OF INFO--USSR
SOURCE--ZH. PRIKL. SPEKTRSK, 1970, 12(1) 129-30
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ELECTROLYSIS, SODIUM CHLORIDE, AMALGAM, METAL ELECTRODE,
CATHODE, MERCURY, CHEMICAL PURITY, ALUMINUM, VANADIUM, IRON, CHROMIUM,
LEAD, MANGANESE, COPPER/(U)ISP28 SPECTROGRAPH

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1983/0928

STEP NO--UR/0368/70/012/001/0129/0130

CIRC ACCESSION NO--AP0053852

UNCLASSIFIED

2/2 027

UNCLASSIFIED

PROCESSING DATE--18SEP70

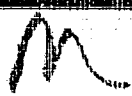
CIRC ACCESSION NO--AP0053852

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TRACES OF AL, V, FE, CR, PB, MN, CU, AND NI (10 PRIME NEGATIVE3 MINUS 10 PRIME NEGATIVE7 PERCENT) IN SOLID AND LIQUID AMALGAMS, NaOH SOLN., AND IN GRAPHITE ARE DETG. BY SPECTROGRAPHY. AN ISP-28 SPECTROGRAPH, WITH A 17-18-A A.C. ARC AND 1 MIN EXPOSURE WAS USED. THE ANAL. LINES ARE AL I 3082.2, V I 3185.4, FE II 2599.4, CR II 2835.6, PB I 2833.1, MN I 2801.1, CU I 3274.0, AND NI I 3050.0 ANGSTROM. THIS METHOD WAS USED FOR DETG. THE SOURCES OF THESE IMPURITIES IN THE INDUSTRIAL ELECTROLYSIS OF NaCl WITH A HG CATHODE. THE RELATIVE STD. DEVIATION WAS LESS THAN 20PERCENT.

UNCLASSIFIED

USSR

UDC: 547.539.2


MIKHAYLOV, V. S., MATYUSHECHEVA, G. I., DERKACH, G. I. (DPRGANS), and
YAGUPOL'SKIY, L. M., Institute of Organic Chemistry, Academy of Sciences
Ukrainian SSR

"A Study of the Reactions Between Carboxylic Acids and Phosphorus Penta-
chloride, 1. The Effect of Solvents"

Leningrad, Zhurnal Organicheskoy Khimii, Akademiya Nauk BSSR, Vol VI, No 1,
Jan 70, pp 149 - 151

Abstract: The hydrazides of certain aromatic carboxylic acids react with
phosphorus pentachloride to form benzal chloride and benzotrichloride.

Experiments run by the authors indicate that the particular solvent
used (benzene, CCl_4 , chlorobenzene, etc.) has a marked influence on the
relative proportion of the two products indicated. In general, use of
polar solvents increases the content of benzal chloride.

A table, and also structural formulation of the reactions, accom-
pany the paper.

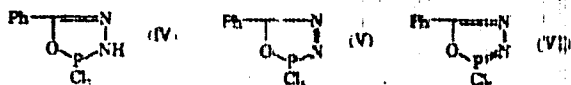
1/1

Acc. Nr AP0048821

Abstracting Service:
CHEMICAL ABST.

Ref. Code:
UR0346

90373n Reaction of hydrazides of carboxylic acids with phosphorus pentachloride. I. Solvent effects. Mikhailov, V. S.; Matyushecheva, G. I.; Derkach, G. I.; *Zh. Org. Khim.* 1971, 6(1), 149-51 (Russ). Heating $BzNHNH_2$ (I) with PCl_5 at 80-120° in CCl_4 , C_6H_6 , $PhCl$, $POCl_3$, $MeNO_2$, $o-O_2NC_6H_4Cl$, or tetrahydrothiophene *s,s*-dioxide gave mixts. of $PhCHCl_2$ (II) and $PhCCl_3$ (III). The proportion of III in the mixt. increased with the temp. and the amt. of PCl_5 . In polar solvents more II than III was formed. The formation of II and III proceeds as follows: $I \rightarrow BzNHNHPCl_4 \rightleftharpoons PhC(OH):NNHPCl_4 \rightarrow IV \rightleftharpoons V$; $V +$



$PCl_5 \rightarrow II + POCl_3 + PCl_3 + N_2$; $IV.HCl \rightarrow$ stable VI, which reacts with PCl_5 to give III, $POCl_3$, PCl_3 , and N_2 . Only the end products (II and III) of the above sequence were identified.

CEJR

REEL/FRA
19800584

USSR

UDC 632.95

MIKHAYLOV, V. S., SUPIN, G. S.

"Determination of Residual Amounts of Phthalophos and Benzophosphate by the Oscillopolarographic Method"

Tr. 2-go Vses. Soveshch. po issled. ostatkov pestitsidov profilakt. zagryazneniya imi produktov pitaniya, kormov i vnesh. sredy (Works of the Second All-Union Conference on the Investigation of Pesticide Residues and Preventive Contamination of Food Products, Feeds and Environment), Tallin, 1971, pp 237-240 (from RZh-Khimiya, No 12, Jun 72, Abstract No 12N442)

Translation: In analyzing residues of phthalophos (I) and phosalone (II) in apples, a sample was extracted by acetone, evaporated and hydrolyzed with 1M KOH; 2M AcOH was added to a pH of 5; the solution was blown with an inert gas and the oscillopolarogram was reduced on a Hg-drop electrode. The sensitivity of the method is 0.2 mg/kg of I or II; the degree of detection is 65.4 ± 8.9 and $63.3 \pm 6.0\%$ respectively.

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USSR

UDC 533.6.011.55

MIKHAYLOV, V. V. (Moscow)

"Flow Past Thin Blunt Bodies With a Separated Shock Layer"

Moscow, Izvestiya Akademii Nauk SSSR, Mekhanika Zhidkosti i Gaza, No 2, 1973, pp 104-111

Abstract: After showing that at a sufficient distance from the nose of a sufficiently thin body at a value of the adiabatic exponent χ that is not strictly equal to unity, a separated shock layer cannot be considered to be free, a scheme for a solution is constructed for $M_{\infty} \gg 1$ and $\chi \rightarrow 1$ ($\chi \neq 1$), which is suitable for investigation in the main approximation of the entire field of flow near a thin blunt body. 4 figures. 5 references.

USSR

UDC 533.6.011.55

MIKHAYLOV, V. V. (Moscow)

"Flow Past Exponentially Shaped Bodies During Strong Compression in the Shock Layer"

Moscow, Izvestiya Akademii Nauk SSSR, Mekhanika Zhidkosti i Gaza, No 4, 1973, pp 104-112

Abstract: Consideration is given to the two-dimensional and axisymmetric flow of a nonviscous perfect gas past bodies with a generatrix of exponential shape with a Mach number of $M_\infty \leq \infty$ and an adiabatic exponent of $\gamma \rightarrow 1$. Principal attention is devoted to the case where a Newtonian free layer does not exist, but the shock layer is unattached at large distances from the nose of the body. 3 figures. 3 references.

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- 7 -

USSR

UDC 616.981.553-07:616.833-091.93-003.93

MIKHAYLOV, V. V., MIKHAYLOVA, S. D., and LAZAREVA, K. P., Chair of Pathological Physiology imeni A. A. Bogomolets, Saratov Medical Institute

"The Mechanism of Disrupted Regeneration of Large Myelinated Nerve Fibers in Botulism"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, Vol 27, No 8, 1971, pp 21-24

Abstract: Experiments performed on healthy frogs (*Rana ridibunda*) and botulinus intoxicated frogs in which the peroneal nerve was severed yielded the following results. In healthy frogs, in the central stump of the sectioned nerve, axoplasm movement is increased but the functional state of the fiber is unchanged on the first day. During subsequent days, axoplasm movement decreases; at the same time, rate of conduction is reduced while the refractory period is lengthened. Removal of the adrenal cortex and pancreas magnifies these changes, while administration of adrenalin or acetylcholine causes no improvement. Administration of botulinus toxin in the later stage of nerve fiber regeneration decreases axoplasm flow even more but exerts no effect on the other two parameters. If the animals are infected with botulinus toxin first and the nerve is sectioned after the toxin has arrested axoplasm movement, this

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USSR

UDC 533.6.011

MIKHAYLOV, V. V., NEYLAND, V. YA., and SYCHEV, V. V.

"The Propagation of Disturbances in Viscous Hypersonic Streams"

Moscow, Probl. Priklad, Mat. i Mekh. (Problems of Applied Mathematics and Mechanics,), Nauka, 1971, pp 232-243 (from Referativnyy Zhurnal, Mekhanika, No 2, Feb 72, Abstract No 2B283, Authors' Abstract)

Translation: The article deals with viscous hypersonic streams of a perfect gas on the basis of the theory of interaction of the boundary layer with an external nonviscous stream. It is shown that if such an interaction is not weak, disturbances caused by any change of the boundary conditions propagate upstream in all cases, all the way to the front edge of the body. From the mathematical point of view this is equivalent to nonuniqueness of expansion of the solution in the vicinity of a sharp front edge, and leads to the problem of finding proper solutions.

In the article an analysis of the solutions is conducted for cases of two-dimensional flow and a three-dimensional field beside a triangular plate with a zero angle of attack. The problem of the origination and development of separation of the boundary layer on a smooth surface is discussed. Eight references

1/1

Extraction and Refining

USSR

UDC 669.3/6.472(02)

DELIMARSKIY, Yu. K., MIKHAYLOV, V. V. and SAMODELOV, A. P., TsNII [Central Scientific Research Institute] of Information and T.-R. I. [Technical and Economic Indicators] of Nonferrous Metallurgy

"Electrochemical Refining of Heavy Nonferrous Metals in Molten Salts"

Elektrokhimicheskoye rafinirovaniye tyazhelykh tsvetnykh metallov v rasplavlennykh solyakh (cf. English above), Moscow, 1971, 151 pp, 111, 93 k. (from EZh-Metallurgiya, No 1, Jan 72, Abstract No 1G194K from summary)

Translation of Abstract: The book examines and systematizes methods for the electrochemical refining of heavy nonferrous metals in melts of salts according to the data of Soviet and foreign literature. A survey is given of the purification of crude metals (Sn, Pb, Zn, Cu, Ni, Ag, Bi, Sb, In, Cd, Ga, Ge) by electrochemical, anodic, and cathodic refining methods. Experimental results are given for Sb and Cu for purification by the method of electroslag refining with the superimposition of direct current in a melt of salts. On the basis of the analysis here made the prospects for the utilization of the specific method of refining for purification of the metals under consideration are assessed. The method of cathodic-anodic refining of metals —
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USSR

DELIMARSKIY, Yu. K., et al., Elektrokhimicheskoye rafinirovaniye tvazhelykh tsvetnykh metallov v rasplavlennyykh solyakh, Moscow, 1971, 151 pp, ill, 93 k.
(from RZh-Metallurgiya, No 1, Jan 72, Abstract No 1G194K from summary)

a new trend in metal purification processes -- is covered in greatest detail. The prospects of industrial use of this method for the refining of Sn, Pb-Sn alloys and the efficiency of its use for the purification of Bi, Cu, Zn, Sb, Ag are shown.

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USSR

UDC 612.741

MIKHAYLOV, V. V., MARTYNOV, G. M., ABROSIMOV, V. V., and SERGIYENKO, V. B.,
Department of Physiology, State Central Institute of Physical Culture, and
Biomechanics Sector, All-Union Scientific Research Institute of Physical
Culture, Moscow

"Effect of Switching Levels of Functioning of Muscles During Rhythmic Work"

Leningrad, Fiziologicheskii Zhurnal SSSR, No 8, 1971, pp 1,128-1,133

Abstract: The value of changing levels of muscular activity was studied in 18 athletes during 10 minutes of work on an ergometer bicycle involving two different methods of pedaling (downward and circular) differing in amount of effort involved, rhythmic structure, and distribution of exertions. Analysis of the oxygen demand and tracings of electromyograms of 12 muscles revealed the downward technique to be more efficient than the circular in terms of the energy expended. However, alternating the two methods proved to be more efficient than when either was used alone. Switching levels of functioning of muscles improves the blood flow and thereby prevents the formation of foci of local fatigue.

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USSR

UDC 616.981.25-06:616.12-008.314-07:616.839.21

MIKHAYLOV, V. V., and ZAYTSEVA, I. A., Department of Pathological Physiology
Imeni A. A. Bogomolets, Saratov Medical Institute

"Role of Autonomic Innervation of the Heart in the Origin of Bradycardia in
Acute Staphylococcus Intoxication"

Moscow, Kardiologiya, No 2, 1971, pp 134-135

Abstract: The central and peripheral ends of transected vagus nerves were stimulated in cats at various times after they were poisoned with Staphylococcus toxin (0.2 ml/kg). From the beginning of the poisoning the excitability of the peripheral and central portions of the parasympathetic innervation of the heart increased markedly simultaneously with the appearance of the initial clinical symptoms (general weakness, bradycardia, salivation, vomiting, etc). At the same time the amount of epinephrine decreased in the vagus nerve, hypothalamus, solar plexus, spinal cord, etc. while the amount of norepinephrine increased substantially. The amount of epinephrine and norepinephrine in the myocardium either remained unchanged or increased at this stage. Later on, however, the epinephrine content markedly decreased as the norepinephrine level rose. Thus, the main factor in the mechanism of development of bradycardia in staphylococcus intoxication is the intensified excitability of the parasympathetic nerves of the heart combined with severe disturbance of catecholamine metabolism. 1/1

- 35 -

USSR

UDC: 681.3.06:51

MIKHAYLOV, V. V.

"A System for Automatic Editing of Tables"

V sb. Elektronno-vychisl. tekhn. i programmir. (Computer Technology and Programming--collection of works), vyp. 3, Moscow, "Statistika", 1970, pp 12-22 (from RZh-Kibernetika, No 7, Jul 71, Abstract No 7V743)

Translation: The paper considers the algorithm of a system which utilizes comparatively simple descriptions for compiling, editing and printing out a table. Author's abstract.

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USSR

UDC 621.382.95:535.371

RYZHIKOV, I.V., RYNYAYEV, V.A., FOMENKO, G.P., VORONIN, Y.G., KMITA, T.G.,
PRONIN, B.V., KHOZHLACHEV, K.I., KRUGLOV, I.I., MIKHAYLOV, V.V., TENYAKOV, YS.I

"Voltampere And Lumenampere Characteristics Of Silicon Carbide Light Diodes With
High Current Density"

V sb. III Vses. konferentsiya po poluprovodnikov. karbidy kremniya (III All-Union
Conference On Semiconductors Of Silicon Carbide), 1968, Moscow, 1970, pp 116-126
(from RZh--Elektronika i yeye primeneniye, No 1, January 1971, Abstract No 1B301)

Translation: Light diodes were investigated, obtained by diffusion of Al and B
into n-SiC (6H) at 2000° C (for 40 minutes) and by diffusion of B alone for 10
minutes. The resistivity of the source material is 0.01--0.3 ohm.cm. The
circuit for measurements, the experimental results and their consideration are
presented. It is established that the voltampere characteristics with a current
density 1-5000 a/cm² are described by the expression $I = AV^n$ ($n = 1.6--1.2$), and
the lumenampere by $L = I^n$ ($n = 0.55--0.7$). Such dependences are the consequence
of a radiative and nonradiative recombination of the carriers in all the regions
of the p-n-n⁺ diode. A deviation is observed from the theory connected with the
capture of majority carriers by fine centers of attachment. 7 ill. 10 ref. N.S.

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- 74 -

Pathology

USSR

UDC 616.931-07:616.832-018.82-02:576.852.23.097.29

MIKHAYLOV, Y. V. and STEMPOVSKIY, A. D., Chair of Pathological Physiology imeni Acad. A. A. Bogomolets, Saratov Medical Institute

"State of Interneurons and Motor Neurons During Diphtheria Intoxication"

Moscow, Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya, No 1, 1971, pp 67-69

Abstract: Changes in background and evoked activity of spinal cord neurons were investigated in cats and guinea pigs injected with diphtheria toxin. Only the background activity of the interneurons was depressed by the ensuing diphtheria. This did not occur in postdiphtheria polyneuritis, when most of the toxin is already eliminated and the allergic demyelinating process is the main factor. In another series of experiments, the same parameters of electrical activity were investigated in medullectomized animals. Both the background and evoked activity of the interneurons remained essentially unchanged even at the peak of inhibition of epinephrine synthesis 6 days after the

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USSR

MIKHAYLOV, V. V. and STENPKOVSKIY, A. D., Patologicheskaya
Fiziologiya i Eksperimental'naya Terapiya, No 1, 1971, pp 67-69

operation. Injection of the medullectomized animals with
epinephrine likewise had no effect. Thus, despite the impair-
ment of mediator metabolism in diphtheria, catecholamines do not
play a specific part in the mechanisms responsible for the dis-
ruption of electrical activity of interneurons.

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ENGINEERING
Aeronautical

USSR

KOGAN, M. N., MIKHAYLOV, V. V., Moscow

"On the Use of Nonstationary Analogy in Plotting Hypersonic Flows around Blunt Bodies"

Moscow, Prikladnaya Matematika i Mekhanika, Vol 34, No 6, Nov Dec 70,
pp 1053-1057

Abstract: A class of nonstationary flows is found for which nonstationary analogy can be directly applied in calculating a hypersonic flow around a blunt body far from the blunt surface. The basic idea behind the proposed method of calculation is that corrections are made in the form of the bow shock found by nonstationary analogy, rather than in the flow distribution. The form of the bow shock is determined by complete coincidence of the fields of the stationary and nonstationary solutions, and the shape of the body corresponds to the trajectory of a particle of the nonstationary flow with entropy equal to that behind the direct shock wave. With this kind of plot, there is no need to introduce any corrections for the shape of the body or the flow distribution. Of course this applies only to regions of flow where the theory of two-dimensional cross sections is applicable. Consideration is

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USSR

KOGAN, M. N., MIKHAYLOV, V. V., Prikladnaya Matematika i Mekhanika, Vol 34,
No 6, Nov-Dec 76, pp 1053-1057

given to the possibility of using nonstationary analogy for plotting stationary hypersonic flows of a perfect gas around flat or axially symmetric blunt bodies. Conditions are found for which the parameters of the known nonstationary solution, recalculated with respect to the nonstationary analogy, coincide with the parameters of some stationary flow within the framework of the theory of two-dimensional cross sections. It is shown that in the general case, the use of nonstationary analogy without introducing corrections for entropy in the flow distribution requires some special deformation of the shape of the shock wave with a transition from nonstationary to stationary flow. The authors thank O. S. Ryzhov and V. V. Sychev for discussing the work.

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USSR

UDC: 616.931+616.931.553-092.9-07:616.36-008-092-07

MIKHAYLOV, V. V., and VORONINA, L. A., Chair of Pathological Physiology imeni
A. A. Bogomoleta, Saratov Medical Institute

"The Mechanism of Impairment of Bile Secretion, Concentration, and Clearance
Functions of the Liver in Experimental Botulism and Diphtheria"

Moscow, Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya, Vol 14,
No 6, Nov/Dec 70, pp 36-41

Abstract: Experiments on dogs showed that the concentration, clearance, and
bile secretion functions of the liver are intensified in botulism but weakened
in diphtheria. Liver dysfunction in botulism is attributed in part to the
marked activation of the sympathetic-adrenal system. In diphtheria, on the
other hand, liver activity is affected not only as a result of irreversible
injury by the toxin to the adrenergic portions of the nervous system, but also
because the liver parenchyma is involved, especially in the late stages of the
disease.

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- 14 -

USSR

UDC 678.048

MIKHAYLOV, V. V., KOKHANOV, YU. V., KAZARYAN, K. S., MATVEYEVA, YE. N.,
and KOZODOY, A. A.

"Metal Dialkyldithiophosphates -- Stabilizers of Polymeric Materials"

Moscow, Plasticheskiye Massy, No 9, 1970, pp 23-24

Abstract: Various metal salts of the dodecyl ester of dithiophosphoric acid were studied as light and thermal stabilizers for polyamides and polyolefines: zinc, nickel, copper, and chromium salts. Comparison of the rate of oxygen consumption at 200°C and 200 mm Hg of the polymers PA-68 and PA-12, to which these salts were added, using a proven stabilizer N,N'-di-β-naphthyl-p-phenylenediamine (DNPDA) as control, showed that the nickel salt of PA-68 and the copper salt of PA-12 surpass the DNPDA. Both of these compounds leave the polymer colorless, in contrast to DNPDA. The copper and nickel salts show good synergistic activity as light stabilizers for polyolefines when mixed with 2-hydroxy-4-alkoxybenzophenone (benzone OA).

Acc. Nr: **AP0051909**

Ref. Code: **UR0219**

PRIMARY SOURCE: Byulleten' Eksperimental'noy Biologii i
Meditsiny, 1970, Vol **69**, Nr **2**, pp **32-35**

PARTICIPATION OF THE POSTERIOR NUCLEI OF THE HYPOTHALAMUS IN THE
MECHANISM OF DEVELOPMENT OF EXPERIMENTAL ALLERGIC ENCEPHALO-
MYELITIS AND OF POSTDIPHTHERITIC POLYNEURITIS

V. V. Mikhaylov, N. G. Astaf'eva, V. Ya. Solov'yeva
Saratov Medical Institute

In the guinea pigs subjected to sublethal doses of diphtheritic toxin or immunized by encephalitogenic mixtures, the development of paralysis of the skeletal muscles was preceded by changes in the functional activity of the hypothalamo-hypophyseal-adrenal system manifested by disturbances in osmotic reflexes and by accumulation of antinerve antibodies in the blood. During electrolytic destruction or pharmacological switching-off by sympatholytic agents, the posterior nuclei of the hypothalamus of the animals retained adequate osmotic reflex to water loading while synthesis of antinerve antibodies markedly decreased. At this background during diphtheritis and experimental allergic encephalo-myelitis, the guinea pigs developed paralysis of the skeletal muscles 4-5 days later and these animals survived 6-7 days over the control.

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19820392

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Fiziko-Tekhnichni Problemi Nizkikh Temperatur, (Kiev, Ukrainian SSR), Akademiya Nauk Ukrainy i SSR, Dopovidy, Seriya A-Fiziko-Tekhnichni i Matematichni Nauki, vol. 32, Jan. 1970, p. 51-53. In Ukrainian.

The upper and low critical loadings are determined of cylindrical shell, which is under the effect of uniform external stress and small fixed torsion. The low critical loading is determined by the method of A. V. Pogorelov. (Author)

ALB

REEL / FRAME
19781474

18

Acc. Nr:
A70046314

Abstracting Service: **5/70** Ref. Code:
INTERNAT. AEROSPACE ABST. **MR0441**

m

A70-23389 # On loss of stability of cylindrical shell under
external stress and small torsion (Pro utratu stabilnosti tsilindricheskoj

Acc. Nr:

AP0037020

Ref. Code: UR 0239

PRIMARY SOURCE: Fiziologicheskii Zhurnal SSSR, 1970, Vol 56,
Nr 2, pp 204 - 210

STUDIES ON INITIAL PERIODS OF MUSCULAR ACTIVITY IN TRAINED SUBJECTS

Mikhaylov, V. V.; Abrosimov, V. V.; Voynyak, S. V.;
Semashko, S. S.; Sergiyenko, V. B.

Dept. of Physiology, State Central Institute of Physical Culture, and the Lab.
of Biomechanics, the National Res. Institute of Physical Culture, Moscow

Increased energy cost of initial stage and during submaximal work performed by sportsmen on a bicycle ergometer right after less intensive work, is discovered as compared with energy expenditures under a steady state condition.

Values of the electric activity of 12 muscles of legs, arms and body, of the efforts applied to turn the pedals and shown by dynamogram, and of oxygen demand during various periods of work, are compared.

Increased energy expenditures during initial work periods are regarded from the viewpoint of a possible role of anaerobic reactions prevailing over aerobic those, spreading of excitation over the C. N. S. and energy expenditure overcoming inertia of the mechanical system.

D. H.

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REEL/FRAME
19721956

USSR

UDC 612.744.2+612.745

MIKHAYLOV, V. V., YERDAKOV, S. V., ABROSIMOV, V. V., SERGIYENKO, V. B.,
Physiology Department, State Central Institute of Physical Culture, and
Biomechanics Sector, All-Union Scientific Research Institute of Physical
Culture, Moscow

"Energy Value of Muscular Work Under Fatigue Conditions"

Leningrad, Fiziologicheskii Zhurnal SSSR imeni I. M. Sechenov, Vol 58,
No 9, 1972, pp 1,397-1,402

Abstract: Hypotheses regarding the mechanism of increase in the energy value of work are based on the fact that additional muscles are summoned in fatigue situations, changes in the physical properties of the muscles, and discoordination of functions. Considering the possibility of fatigue by glycolysis of respiration during muscular work and the reduction in oxygen consumption in the case of acute fatigue, a role of activation of glycolysis with low energy effect and simultaneous suppression of the highly efficient oxydative phosphorylation in the mechanism of increased expenditures during fatigue is proposed. A study was made to check the hypotheses.

Experienced bicyclists doing a variable amount of work at submaximal capacity on a bicycle ergometer were tested to determine the oxygen need
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USSR

MIKHAYLOV, V. V., et al., *Fiziologicheskii Zhurnal SSSR imeni I. M. Sechenov*, Vol 58, No 9, 1972, pp 1,397-1,402

of work periods which were standard with respect to capacity and duration and also the vegetative and biometric indexes. During the fatigue period, the oxygen demand was 104-176% higher than otherwise. The phenomena of using additional muscles in the presence of fatigue not functioning previously and also discoordination of the functions were not detected in the study. An increase in work value in the case of fatigue was caused by recruiting additional motor units of the primary working muscles and also activation of glycolysis with low energy efficiency.

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USSR

UDC 533.6.011

MIKHAYLOV, V. V.

"Flow Around a Triangular Wing with Blunt Edges with Strong Compression in a Shock Layer"

Uch. zap. Tsentr. Aerogidrodinam. In-ta. [Scientific Writings of Central Institute of Aerodynamics and Hydrodynamics], Vol 3, No 3, 1972, pp 18-24, (Translated from Referativnyy Zhurnal, Mekhanika, No 11, 1972, Abstract No 11 B334 by G. I. Maykapar).

Translation: A flat triangular wing is studied at zero angle of attack in a hypersonic stream of a nonviscous ideal gas. The area of perturbed flow consists of a thin shock layer, through which the main mass of the gas passes, and the area between the shock layer and the surface of the wing. The theory of bands is correct for the shock layer, the spatial nature of the flow is manifested in the area of the plane of symmetry. Calculations are presented for a wing with cylindrical circular edges; the results are presented as additives to the flow near a sliding plate. The sweepback angle has no influence on the change in pressure along the wing axis.

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USSR

UDC 616.981.553-092.9-07:616.74-073

MIKHAYLOV, V. V. and MORRISON, V. V., Saratov Medical Institute

"Mechanism of Change in Polarization of Striated Muscle Fibers in Experimental Botulism and After Denervation"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, No 1, 1973, pp 25-30

Abstract: Injection of rats and frogs with botulin produced general paralysis and a progressive decrease membrane potential and in potassium, sodium, and epinephrine with a simultaneous increase in norepinephrine. Local botulism had the same effects but not until 2 to 3 days after the onset of paralysis. In denervated rat muscle, membrane potential decreased and the potassium level dropped immediately and some time after the nerve was transected, but the decreases were less pronounced than in the same muscle poisoned with botulin. However, the sodium concentration did not change immediately after denervation and, in fact, it increased at a later period. Epinephrine decreased less in denervated muscle than in poisoned muscle and the epinephrine concentration remained normal. The differences between the effects of botulism and denervation on the polarization of muscle fibers, catecholamines and electrolytes in skeletal muscles are attributed to the fact that botulism inhibits mainly the activity of the tetanic neuromuscular apparatus but preserves that of the tonic

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USSR

MIKHAYLOV, V. V. and MORRISON, V. V., Byulleten' Eksperimental'noy Biologii i Meditsiny, No 1, 1973, pp 25-30

fibers, whereas denervation completely blocks the trophic influence of the phasic and tonic nerve fibers on the effectors.

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USSR

UDC 621.374.32

ZMUDIKOV, V. L., MIKHAYLOV, Ye. I.

"A Multistage Flip-Flop Device"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Otraztsy, Tovarnyye Znaki,
No 4, Feb 72, Author's Certificate No 326742, Division II, filed 6 Oct 69,
published 19 Jan 72, p 216

Translation: This Author's Certificate introduces a multistage flip-flop device based on transistors. The device contains at least two flip-flops -- a triggering flip-flop and a triggered flip-flop -- and connecting networks between the flip-flops, the outputs of these networks being connected to the bases of the triggered flip-flops. As a distinguishing feature of the device, the connecting networks between flip-flops are in the form of diodes, and the bases of the flip-flop transistors are used as the outputs for the triggering flip-flops.

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- 55 -

1/2 025 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--FOREIGN INCLUSIONS IN THE CYCLED AIR AND THE REQUIREMENTS FOR THE
AIR TAKING SYSTEMS OF A GAS TURBINE UNIT -U-
AUTHOR-(03)-ALEKSEYEV, A.V., YEFREMOV, B.G., MIKHAYLOV, YE.I.

COUNTRY OF INFO--USSR

SOURCE--ENERGOMASHINOSTROENIE, VOL. 16, FEB. 1970, P. 7-9

DATE PUBLISHED-----70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, ENERGY CONVERSION
(NON-PROPULSIVE)
TOPIC TAGS--GAS TURBINE, EROSION, IMPURITY LEVEL, AIR BREATHING ENGINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/1486

STEP NO--UR/0114/70/016/000/0007/0009

CIRC ACCESSION NO--AP0120273

UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0120273

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STUDY OF THE HARMFUL EFFECTS OF THE PRESENCE OF NATURAL AND TECHNICAL IMPURITIES IN THE CIRCULATED AIR ON THE TIME DEPENDENT PERFORMANCE OF GAS TURBINE UNITS. SPECIAL ATTENTION IS GIVEN TO THE DAMAGE FROM THE IMPURITIES PRODUCING EROSION, DEPOSITS AND OVER HEATING IN THE AIR FLOW SECTIONS OF GAS TURBINES. A GENERALIZED POLYTROPE TECHNIQUE IS USED TO ESTIMATE THESE DAMAGING EFFECTS. REQUIREMENTS WHICH SHOULD BE MET BY THE AIR INTAKE SYSTEMS ARE INDICATED. DESIGN CONSIDERATIONS ARE SET FORTH TO REMEDY THESE UNDESIRABLE EFFECTS.

UNCLASSIFIED

Acc. Nr.: AP0046771

Ref. Code: UB 0115

USSR

MIKHAYLOV, YE. V.

UDC 681.335.099

"Analysis of the Error Introduced by a Null-Organ in Analog-Digital Converters of Discharge Balancing"

Moscow, Izmeritel'naya Tekhnika (Measurement Technology), No 1, 1970, pp 63-66

Translation: An analysis was conducted of the error introduced by a null-organ into analog-digital converters of discharge balancing with allowance made for the dynamic characteristics (fast action) of the null-organ, and the determination of this error from the fast action (duration of one balancing cycle) of an analog-digital converter was presented.

The conditions of maximum error emergence were determined, and its dependence on the duration of one balancing cycle and the null-organ parameters were presented. The article ended with the results of experimental verification and the possible application of the obtained results. (4 figures, 4 biblio. ref.)

Reel/Frame
15790075

4 PIN

USSR

UDC: None

BASOV, N. G., BOYKO, V. A., ZAKHAROV, S. M., ~~KROKHIN, O. N.~~,
~~MIKHAYLOV, Yu. A.~~, SKLIZKOV, G. V., and FEDOTOV, S. I.

"Mechanisms of Neutron Generation in a Laser Plasma"

Moscow, Pis'ma v ZhETF, vol 18, No 5, 5 September 1973, pp 314-317

Abstract: This letter gives the results of experiments performed to investigate the mechanisms which give rise to neutrons in laser plasmas. The experiments here described proved that, depending on the experimental conditions, both hot and cold neutrons are produced. The measurements involved were conducted in a variant of the sharp focusing of a single-channel laser on a massive CD₂ target, as well as in spherically symmetrical irradiation of CD₂ particles measuring about 100 μ in diameter by the output of a multichannel laser. Both methods were discussed in earlier papers by the first-named author above, et al (Pis'ma v ZhETF, 13, 1971, p 691; 15, 1972, p 589; ZhETF, 62, 1972, p 203). Results of both types of measurement are separately examined. Some of these cast doubt on the assertion of previous researchers that the appearance of fast ions is connected with acceleration in the critical density region.

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USSR

UDC 533.697

KIREYEV, V. I., LIFSHITS, YU. B. MIKHAILOV, YU. YA.

"Solution of the Direct Problem of the Laval Nozzle"

Uch. zap. Tsentr. aerogidrodinam.in-ta (Scientific Notes of the Central Aerodynamics Institute), Vol 1, No 1, 1970, pp 8-13 (from RZh-Mekhanika, No 10, Oct 70, Abstract No 10 B337)

Translation: This article contains a discussion of the possibility of calculating the flow in the input section of planar and axisymmetric nozzles with the help of the method of fixing based on the implicit difference scheme. The hyperbolic system of equations of nonstationary isentropic motion of an ideal gas is written in cylindrical coordinates x and r . On the axis of symmetry of the nozzle and the wall $r = R(x)$, the sealing conditions are given; when $x \rightarrow -\infty$ all the parameters are considered constant with respect to cross section, but their values are calculated during the calculation process (in the calculation mode it is possible to pass only a fully defined flow of gas which cannot be given in advance through the nozzle). The numerical solution is found in the

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KIREYEV, V. I., et al., Uch. zap. Tsentr. aerogidrodinam. in-ta (Vol 1, No 1, 1970, pp 8-13

variables $\xi = r/R(x)$, $\eta = \eta(x, r)$ realizing mapping of the inside of the given nozzle onto the inside of a fixed rectangle. For the difference approximation of the system, four and six point implicit schemes are used. The system of nonlinear difference equations obtained is solved by the pass method. A graph is presented for the line $\lambda = \text{const}$ in a round nozzle $R(x) = 1 - (2\chi 2x)^{-1} + \gamma x^2$ ($\gamma = 0$ for $x < 0$, $\gamma = 0.24$ for $x > 0$), and it is compared with the known solution of the inverse problem. The bibliography has 9 entries.

USSR

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BASOV, N. G., IVANOV, YU. S., KROKHIN, O. N., MITCHAYLOV, YU. G. V., and FEDOTOV, S. I., Physics Institute imeni P. L. Lebedev, Academy of Sciences USSR

"Neutron Production in Spherical, High-Power Laser Irradiation of a Target"

Moscow, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 15, No 10, 20 May 72, pp 539-592

Abstract: The authors recorded the neutron yield during the heating of a solid, deuterated polyethylene target subjected to spherical irradiation by a multibeam laser. It was found that the results significantly exceed those obtained during strong focusing. The size of the heated target was approximately equal to the focal spot diameter, and the heated mass was determined by the particle mass. The scheme for focusing nine laser beams on the target was similar to one previously described by the authors. The neutrons were recorded by three scintillation detectors placed at various distances from the target. Recoil-proton nuclear photoemulsions were used for the quantitative measurements. Assuming isotropism of the neutron escape from the plasma, the number of neutrons per burst was found to be equal to $3 \cdot 10^6$.

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BASOV, N. G., et al., Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 15, No 10, 20 May 72, pp 589-592

The authors thank V. G. LARIONOVA and L. I. KRAMOVA for assistance in processing the photoemulsions, and V. M. GROZNOV, A. A. YEROKHIN, N. N. ZOREV, and N. V. NOVIKOV for assisting in the work.

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USSR

UDC 532.596+551.46.06.8

IVANOV, V. N., MIKHAYLOV, Yu. D.

"Estimate of Rate of Dissipation of Turbulent Energy and Horizontal Turbulence Factor of Diffusion in the Baltic Sea"

Tr. Gos. Okeanogr. In-ta. [Works of State Institute of Oceanography], No 12, 1972, pp 107-113, (Translated from Referativnyy Zhurnal, Mekhanika, No 11, 1972, Abstract No 11 B477 by the author's).

Translation: Structural functions calculated on the basis of series of observations of the flow velocity modulus are used to establish the presence of an inertial interval in the mesoturbulent zone. The Kolmogorov-Obukhov relationship for structural functions is used to determine the rate of dissipation of turbulent energy within the limits of the inertial interval, amounting to $2 \cdot 10^{-4} \text{ cm}^2 \text{ sec}^{-3}$. The value found agrees satisfactorily with the data of Ozmidov and a number of other authors. Using turbulent energy and its dissipation, an attempt is made to produce estimates of the horizontal turbulence factor for diffusion, lifetime of a vortex and characteristic drift dimensions downstream in the diffusing cloud of pollutants (using dependences suggested by Ivanov for the velocity field of the wind in the lower layer of the atmosphere). The values of these characteristics found

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USSR

UDC 532.596+551.46.06.8

IVANOV, V. N., MIKHAYLOV, Yu. D., Tr. Gos. Okeanogr. In-ta, No 12, 1972,
pp 107-113.

agree satisfactorily with the results produced by other methods, for example
by observations of the actual turbulent diffusion. 24 Biblio. Refs.

2/2

1/2 013 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--MECHANISM OF THE THERMAL DECOMPOSITION OF OXALATES -U-

AUTHOR--(04)-BOLDYREV, V.V., NEVYANTSEV, I.S., MIKHAYLOV, YU.I.,
KHAIRETDINOV, E.F.
COUNTRY OF INFO--USSR

SOURCE--KINET. KATAL. 1970, 11(2), 367-73

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--THERMAL DECOMPOSITION, OXALATE, CHEMICAL REACTION MECHANISM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----FD70/605012/005 STEP NO--UR/0195/70/011/002/0367/0313

CIRC ACCESSION NO--AP0140290

UNCLASSIFIED

2/2 013 UNCLASSIFIED PROCESSING DATE--04DEC70
CIRC ACCESSION NO--AP0140290
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DISCUSSION OF THE PUBLISHED
HYPOTHETICAL MECHANISMS OF THERMAL DECOMPN. OF OXALATES LEADS TO THE
CONCLUSION THAT CLEAVAGE OF C-C BOND OF C SUB2 O SUB4 PRIME2NEGATIVE IS
THE PRIMARY STEP IN THE DECOMPN. FACILITY: INST. KHIM. KINET.
GORENIYA, NOVOSIBIRSK, USSR.

UNCLASSIFIED

MIKHAYLOV, Yu. M.

So: JPRS 66634
27 NOVEMBER 1973

EXPERIMENTAL STUDY OF THE MAGNETOHYDRODYNAMIC FLOW OF A LIQUID-METAL IN A
RECTANGULAR DUCT WITH CONDUCTIVE WALLS

Articles by E. I. DMITRIYEV, Yu. M. MIKHAYLOV and V. S. PRIZHAKOV, Order of
Leningrad Academy Institute of Metal Physics, Leningrad, USSR; Salzburg,
IADIA Symposium on Electricity from MHD, 1966, pp 843-857

Results are presented from an experimental study of laminar
and turbulent magnetohydrodynamic flow of liquid sodium in a
rectangular duct with conducting walls. The studies were made
on a specially equipped sodium loop. The purpose of the study
was to determine the losses in the walls and the magneto-
hydrodynamic losses in the different regions of movement of
the metal.

A study was made of the magnetohydrodynamic flow of a conducting liquid
in the rectangular duct of a magnetohydrodynamic generator with conducting
walls for metal velocities to 30 m/sec. In a long channel the analysis was
made of the pressure losses without load as a function of the flow parameters.
The contribution of the losses in the walls and the magnetohydrodynamic losses
to the total losses is determined. The efficiency of conversion of the kin-
etic energy into electric energy with different duct parameters was investi-
gated in a short duct.

From the point of view of improving the efficiency of the complete
cycle of the magnetohydrodynamic conversion system in a liquid metal, magneto-
hydrodynamic generators with high metal temperatures in the operating zone of
the generator (600-800°C) are preferable. The creation of such generators
encounters highly significant difficulties of manufacturing the insulated
walls or coverings operating at temperatures on the order of 700°C and with
metal velocities of 30-100 m/sec. Along with the search for means of solving
this problem it is of interest to investigate ordinary generators for which
the upper and lower walls were made of stainless steel, and the side walls,
electrodes.

The most significant feature of such generators is the significant
pressure losses at idle which are accumulated from the losses caused by cur-
rents in the walls and losses connected with the effect of the magnetic field

USSR

UDC: 621.396.67.001.5:533.9

MIKHAYLOV, Yu. M., Editorial Staff of "Radiotekhnika i elektronika"

"The Impedance of an Antenna on Low Frequencies in a Magnetically Active Plasma"

Impedans anteny na nizkikh chastotakh v magnitoaktivnoy plazme (cf. English above.), AN SSSR, Moscow, 1970, 17 pp, ill. bibl. of 9 titles (from RZh-Radiotekhnika, No 7, Jul 70, abstract No 7B9)

Translation: The effect of a homogeneous magnetically active plasma on the impedance of an electrical antenna in the centimeter wavelength range is studied in the quasi-static approximation with regard to collisions. The reactance and resistance of a spherical probe and a prolate spheroid are calculated in the frequency range from $0.05\omega_h$ to ω_h ($\omega_h = \sqrt{\Omega_n\omega_n}$) -- the hybrid gyrofrequency -- for plasma parameters corresponding to the region of the ionosphere from 100 to 500 km above the surface of the earth. For a spherical probe at altitudes of more than 200 km, the nature of the impedance is inductive, x and R increase smoothly with frequency with $(x) \gg R$; a sharp resonance is observed close to ω_h and the resistance becomes equal to the reactance. For a prolate spheroid oriented parallel to the magnetic field, the resonance on the hybrid frequency is smoother. Authors' abstract.

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MIKHAYLOV, Yu. N.

SEMINAR ON CRYSTALLOCHEMISTRY OF COORDINATION AND ORGANOMETALLIC COMPOUNDS

Article by Candidate of Chemical Sciences Yu. N. Mikhaylov, Moscow, Vestnik
 Khimii Nauk SSSR, Russian, No 3, March 1977, pp 32-33

The seminar was organized by the scientific council on chemical
 kinetics and structure and by the Institute of General and Inorganic
 Chemistry Im. V. I. Vernadsky, USSR Academy of Sciences. It was held in
 Moscow on 20-21 October 1977. The seminar was attended by scientists repre-
 senting Bulgaria, Poland, Soviet Union, Czechoslovakia, and Yugoslavia.
 Numbering about 300.

The chemistry of coordination compounds and chemistry of organo-
 metallic compounds is developing very rapidly at the boundary between
 inorganic and organic chemistry. It is difficult to distinguish the boundary
 between these classes of compounds. Therefore determination of their
 structural characteristics and stereochemical principles become particularly
 important. Crystallochemistry and structural analysis is increasingly the
 arbiter in establishing the structure of these new types of compounds.

The leading Soviet specialists read at the seminar review reports on
 the state and prospects of work in this field. Several of the reports and
 communications presented the most interesting scientific results obtained
 in the crystallochemical laboratories of the USSR and other socialist
 countries in the last few years.

The seminar was opened by N. V. Belov's penetrating lecture "New
 Chapters in Structural Crystallochemistry," in which the principles of the
 structure of crystalline materials were set forth, the fundamental positions of
 crystallochemistry were outlined, latest research of the Institute of
 Crystallochemistry of the USSR Academy of Sciences on problems of silicate
 crystallochemistry, crystallochemistry of minerals of rare-earth elements,
 general crystallochemistry and theory of x-ray diffraction analysis were
 discussed.

Chief attention at the seminar was devoted to structural analyses
 of the most important classes of coordination compounds. In the lecture

JPAS 55889
 21 May 77

MIKHAYLOV, Yu. A.

JPRS 55664

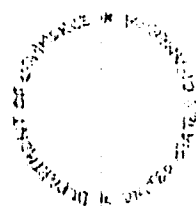
7 April 1972

TASKS OF PHYSICISTS OF THE LATVIAN SSR ACADEMY
OF SCIENCES UNDER THE FIVE-YEAR PLAN

BY

Yu. A. MIKHAYLOV

- USSR -



JOINT PUBLICATIONS RESEARCH SERVICE

USSR

UDC: 519.2

~~MIKHAYLOV, Yu. N.~~

"Concerning Selection of the Matrix of Variable Coefficients
in the Multidimensional Robbins-Monroe Procedure"

Moscow, Metody optimiz. sistem mnogosvyazn. regulir.--sbornik
(Methods of Optimizing Systems of Multiple-Connected Control--
collection of works), "Nauka", 1972, pp 52-61 (from RZh-Kiber-
netika, No 10, Oct 72, abstract No 10V200)

[No abstract]

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(12)

USSR

UDC 539.1.074.3

BORISOV, A. A., BUGORSKIY, A. P., BUSHNIN, Yu. A., DEREVICHENOV, A. A.,
DUNAYTSEV, A. F., ZHIL'CHENKOV, V. D., MATULENKO, Yu. A., MESHCHAYIN, A. P.,
MIKHAYLOV, Yu. V., NURUSHEV, S. B., SEN'KO, V. A., SMIRNOV, V. V., SMIRNOV,
Ye. V., SISKIN, V. V., SOLOV'YEV, L. F., and SOLOV'YANOV, V. L., Institute
of High-Energy Physics, Serpukhov

"A Hodoscopic Installation for Investigation of the Elastic Scattering of
High-Energy Particles"

Moscow, Pribery i Tekhnika Eksperimenta, No 3, May/Jun 73, pp 49-53

Abstract: A description is given of a hodoscopic installation, developed at
the Institute of High-Energy Physics, for investigation of the elastic scat-
tering of high-energy particles within the pulse range of 30-60 gigaelectron
volts/sec. The range of dispersion angles covered by the installation is
0-29 millirads with an angular resolution of ± 0.17 millirad. The total
solid angle is 39 microsteres. The pulse is determined to within $\pm 0.22\%$.
The resolving time is 35 nanosec. The dead time is 50 microsec. The pulse
pass band of the spectrometer is 8%. The statistics-setup is up to 10^6 per
hour. The installation is electrically coupled to a "Mink-2" computer,
which stores and processes the information during the experiment. The
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USSR

BORISOV, A. A., et al., Priory i Tekhnika Eksperimenta, No 3, May/Jun 73, pp 49-53

obtained results are immediately printed out in the form of tables and graphs, and also appear on the oscillograph screen. Monitoring equipment has been developed, which keeps track of proper operation of the hodoscopes. The first results have been obtained on the scattering of π^- -mesons on nuclei at a pulse of 50 gigaelectron volts/sec and of protons within the initial-pulse range of 30-60 gigaelectron volts/sec. 3 figures. 2 tables. 3 references.

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- 153 -

1/2 033 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--NEW PHASES IN A SCANDIUM TITANIUM OXYGEN SYSTEM -U-
AUTHOR-(03)-MIKHAYLOV, YU.YA., KOMISSAROVA, L.N., POKROVSKIY, B.I.
COUNTRY OF INFO--USSR
SOURCE--DOKL. AKADE. NAUK SSSR 1970, 190(5), 1117-20
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--X RAY ANALYSIS, CRYSTAL LATTICE STRUCTURE, SCANDIUM, TITANIUM,
OXYGEN, PHASE ANALYSIS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRACTION--1998/2065 STEP NO--UR/0020/70/190/005/1117/1120
CIRC ACCESSION NO--AT0122294
UNCLASSIFIED

2/2 033

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AT0122294

ABSTRACT/EXTRACT--(U) GP-U- ABSTRACT. PART OF THE SC TIO SYSTEM WAS STUDIED BY X RAY PHASE ANAL., AND MORE ACCURATE DATA WERE OBTAINED ON THE COMPN. OF THE COMPOS. FOUND EARLIER (IBID, 1966, 168, 1076). THE COMPN. IS GIVEN BY THE FORMULA SC SUB2 TIO SUB5, AND ITS INDUCED X RAY DIFFRACTION DIAGRAM AND THE CELL PARAMETERS ARE GIVEN. THE PHASE EQUIL. WERE STUDIED AT 1250 AND 1500DEGREES. IN THE REGION RICH IN TIO, SC SUBMINUSX TIO SUBX TIO SUB5, WHICH IS ISOSTRUCTURAL WITH SC SUB2 TIO SUB5, IS FORMED. IT IS MONOCLINIC WITH BETA IS CONGRUENT TO 90DEGREES. AS THE SC CONC. IS INCREASED BETA APPROACHES 90DEGREES MORE CLOSELY, AND FOR X EQUALS 0.82-0.83 BETA EQUALS 90DEGREES. AT 1250DEGREES THE REGION OF HOMOGENEITY OF THIS PHASE OCCURS AT X EQUALS 0.94-0.10, BUT AT 1500DEGREES IT NARROWS TO X EQUALS 0.94-0.63. A NO. OF NEW PHASES WERE FOUND IN THE SYSTEM, AND THEIR LATTICE PARAMETERS AND REGION OF EXISTANCE ARE TABULATED. SC BEHAVES LIKE AL AND FE. FACILITY: MOSK. GOS. UNIV. IM. LOMONOSOVA, MOSCOW, USSR.

UNCLASSIFIED

1/2 018 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--STUDY OF PEROXIDASE AND CATALASE ACTIVITY IN OXYGEN UNDER RAISED
PRESSURE -U-
AUTHOR-(04)-YEFUNI, S.N., MIKHAYLOV, YU.YE., FOKINA, T.S., SHIMKEVICH,
L.L.
COUNTRY OF INFO--USSR
SOURCE--EKSPERIMENTAL'NAYA KHIRURGIYA I ANESTEZIOLOGIYA, 1970, NR 3, PP
63-65
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--OXIDASE, CATALASE, ENZYME ACTIVITY, OXYGEN TOXICITY, WHITE
MOUSE, HYPERBARIC MEDICINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3003/0121

STEP NO--UR/0481/70/000/003/0063/0065

CIRC ACCESSION NO--AP0129377

UNCLASSIFIED

2/2 018 UNCLASSIFIED PROCESSING DATE--30OCT70
CIRC ACCESSION NO--AP0129377
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PEROXIDASE AND CATALASE ACTIVITY
IN BLOOD AND CERTAIN INTERNAL ORGANS WAS STUDIED UNDER ACTION OF PURE
OXYGEN WITH PRESSURE OF 5 ATMOSPHERES TILL TOXIC CRAMPS SUPERVENED IN
WHITE MICE. PEROXIDASE ACTIVITY ROSE MARKEDLY IN THE PERIPHERAL BLOOD
AND IN THE LEUCOCYTES INFILTRATING THE PARENCHYMATOUS ORGANS, AS WELL AS
CATALASE ACTIVITY IN THE BLOOD INCREASED AT THE EXPENSE OF
ERYTHROCYTOSIS (CATALASE INDEX REMAINED PRACTICALLY UNCHANGED). MARKED
TISSUE EOSINOPHILIA WAS FOUND. DATA OBTAINED ARE COMPARED WITH
LITERATURE DATA ON INCREASE CONTENT OF PEROXYDE COMPOUNDS IN THE BODY
DURING OXYGEN INTOXICATION. IT IS SUGGESTED THAT INCREASED ACTIVITY OF
THE ABOVE ENZYMES IN A SIGN OF ADAPTATION OF THE BODY TO TOXIC ACTION OF
OXYGEN. FACILITY: LABORATORIYA ISKUSSTVENINNOY OKSIGENATSII
NAUCHNO-ISSLED. INSTITUTA KLINICHESKOY I EKSPERIMENTAL'NOY KHIRURGII,
MZ SSSR, MOSKVA.

UNCLASSIFIED

USSR

UDC 547.341

NASAKIN, O. Ye., KORMACHEV, V. V., NIKHAYLOV, Z. I., and KUREHTIN, V. A.,
Chuvash State University imeni I. N. Ul'yanov

"Reaction of Di(β -chloroethyl) Vinylphosphonate With Trialkylsilyl-
alkanethiols"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 12, Dec 73, pp 2786-2787

Abstract: Di(β -chloroethyl) vinylphosphonate reacts easily with tri-
alkylsilylalkanethiols under UV light for 18-20 hrs at 30-35° yielding
di(β -chloroethyl) β -(trialkylsilylalkylthio)ethylphosphonates, as a
result of an anti-Markovnikov's addition.

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Acc. Nr:

AP0053421

Abstracting Service

CHEMICAL ABST.

Ref. Code:

71R0079

111557: Vinyl ethers of organosilicon alkylsilane alcohols. Shostakovskii, M. F.; Mikhailov, Z. I.; Kornarov, N. V.; Vlasova, N. N. (Irkutsk. Inst. Org. Khim., Irkutsk, USSR). *Zh. Obshch. Khim.* 1970, 40(1), 84-90 (Russ). (Starting 8.9 g $\text{Et}_3\text{SiCH}_2\text{CH}_2\text{SH}$ with 1.5 g NaOH and 2.5 g $\text{ClCH}_2\text{CH}_2\text{OH}$ in aq. EtOH gave 75% $\text{Et}_3\text{SiCH}_2\text{CH}_2\text{SCH}_2\text{CH}_2\text{OH}$, b_p 120°, d_4^{20} 0.9503, n_D^{20} 1.4920. Similarly were prepd. 35-80% $\text{R}_3\text{Si}(\text{CH}_2)_n\text{S}(\text{CH}_2)_m\text{OH}$ (R , m , and n shown): Me_3 , 2,1, b_p 116°, 0.9038, 1.4725; MeEt_2 , 2,1, b_p 110°, 0.9466, 1.4805; MeEt_2 , 2,2, b_p 120°, 0.9480, 1.4872; Me_3 , 2,2, b_p 121°, 0.9398, 1.4795; Me_3 , 2,3, b_p 113°, 0.9356, 1.4800; Et_3 , 2,3, b_p 123°, 0.9480, 1.4890; MeEt_2 , 3,1, b_p 115°, 0.9273, 1.4810; MeEt_2 , 3,2, b_p 131°, 0.9395, 1.4800; Et_3 , 3,2, b_p 120°, 0.9455, 1.4900; Me_3 , 3,2, b_p 107°, 0.9400, 1.4805; Me_3 , 3,3, b_p 102°, 0.9315, 1.4762; Et_3 , 3,3, b_p 134°, 0.9374, 1.4860; Pr_3 , 3,2, b_p 150°, 0.8951, 1.4705. Irradn. with uv light of a mixt. of 2.9 g $\text{Et}_3\text{SiCH}_2\text{CH}_2\text{SH}$ and 0.9 g allyl alc. 10 hr gave 47% $\text{Et}_3\text{SiCH}_2\text{CH}_2\text{SCH}_2\text{CH}_2\text{CH}_2\text{OH}$, b_p 120°, d_4^{20} 0.9455, 1.4900, providing an alternate route to the compds. above with $m = 3$. Heating the above alcs. in dioxane with a catalytic amt. K salt of the alc. under 15-18 atm (initial) C_2H_4 1.5 hr at 130-141° gave 40-70% $\text{R}_3\text{Si}(\text{CH}_2)_n\text{S}(\text{CH}_2)_m\text{OCH}_2\text{CH}_3$ (R , m , and n shown): Me_3 , 2,1, b_p 82°, 0.9141, 1.4700; MeEt_2 , 2,1, b_p 78°, 0.9126, 1.4750; MeEt_2 , 2,2, b_p 93°, 0.9211, 1.4810; Et_3 , 2,2, b_p 121°, 0.9197, 1.4840; Me_3 , 2,2, b_p 103°, 0.9140, 1.4335; Me_3 , 2,3, b_p

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85°, 0.9066, 1.4712; Et, 2,3, b, 123°, 0.9184, 1.4820; MeEt, 3,1, b, 69°, 0.8577, 1.4410; Me, 3,2, b, 84°, 0.9092, 1.4755; MeEt, 3,2, b, 105°, 0.9196, 1.4830; Et, 3,2, b, 137°, 0.9150, 1.4860; Me, 3,3, b, 114°, 0.9083, 1.4740; Et, 3,3, b, 143°, 0.9172, 1.4840. Alternatively, $R_3Si(CH_2)_nSH$ and $ClCH_2CH_2OCH:CH_2$ emulsified in aq. NaOH at 90° gave the vinyl ether described above in 70% yield. Heating the vinyl ethers with AcOH 30 hr at 60° gave $R_3Si(CH_2)_nS(CH_2)_mOCH_2CH_2OAc$ (R_3 , m, and n, shown): Me, 2,1, b, 92°, 0.9824, 1.4590; Et, 2,2, b, 142°, 0.9752, 1.4720; Et, 3,2, b, 152°, 0.9695, 1.4718; Me, 2,3, b, 125°, 0.9674, 1.4610; Et, 2,3, b, 149°, 0.9655, 1.4720; Me, 3,3, b, 128°, 0.9616, 1.4620; Et, 3,3, b, 165°, 0.9640, 1.4718. Heating the vinyl ethers with PhSH in the presence of $(Me_2CO)_2$ catalyst 10 hr at 130-140° or reaction of the vinyl ethers with BuSH in uv light gave 52-92% $R_3Si(CH_2)_nS(CH_2)_mOCH_2CH_2SR^1$ (R , R^1 , m, and n shown): Me, Bu, 2,1, b, 160°, 0.9513, 1.4875; Et, Ph, 2,2, b, 170°, 1.0092, 1.5310; Et, Bu, 2,2, b, 195°, 0.9506, 1.4978; Et, Ph, 3,2, b, 198°, 1.0211, 1.5435; Et, Bu, 3,2, b, 168°, 0.9451, 1.4940; Me, Ph, 3,3, b, 175°, 1.0307, 1.5490; Me, Bu, 3,3, b, 192°, 0.9880, 1.4860; Et, Ph, 3,3, b, 200°, 0.9968, 1.5230; Et, Bu, 3,3, b, 200°, 0.9409, 1.4925. $Et_3SiCH_2CH_2SCH_2CH_2OCH:CH_2$, BuOH, and a trace concd. HCl gave, after 0.5 hr at 50°, 57% $Et_3SiCH_2CH_2SCH_2CH_2OCH_2MeOBu$, b, 140°, 0.9342, 1.4740; also prepd. from $Et_3SiCH_2CH_2SCH_2CH_2OH$ and BuOCH:CH₂ with HCl catalyst. The vinyl ethers described above added HCl to form extremely unstable viscous oils, but were unaffected by peroxidic initiators, G. M. Kosolapoff

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19830446

Acc. Nr:

AP0053456

Abstracting Service:

CHEMICAL ABST.

Ref. Code:

4R 0366

110702x Alkyl(aryl)thioalkoxyethylenes. Shostakovskii, M. F.; Komarov, N. V.; Mikhaylov, Z. I.; Kolosnitsyna, T. I. (Irkutsk. Inst. Org. Khim., Irkutsk, USSR). Zh. Org. Khim. 1970, 6(2), 233-7 (Russ). The reaction of $RS(CH_2)_nOH$ with $HC:CH$ in the presence of $RS(CH_2)_nOK$ gave ~80% $RS(CH_2)_nOCH:CH_2$ (I) (R and n given): Pr, 4; Bu, 2; heptyl, 1; Ph-CH₂, 2; Et, 3; Pr, 3; neopentyl, 3; heptyl, 3; Ph, 3; and PhCH₂, 3. The reaction of I (R = Bu, n = 3) (II) with BuOH gave $BuS(CH_2)_3OCHMeOBu$, which on prolonged heating split to $MeCH(OBu)_2$ and $MeCH(O(CH_2)_3SBu)_2$ (III). Condensation of II with $BuS(CH_2)_3OH$ also gave III. The reaction of I with AcOH gave $R(CH_2)_nOCHMeOAc$. CPJE

REEL/FRADE

19830481

UDC 576.85(478)

USSR

MARITS, A. A., CHASHCHINA, I. N., CHERVINSKAYA, S. I., ELKIS, K. U., KORNES, R. V., BELYAYEVA, N. S., CHEBAN, Ye. D., KOTSEFAN, A. S., DONRUSKINA, S. V., GURCHIOGLUYANTS, L. V., and MIKHAYLOVA, A. A., Moldavian Scientific Research Institute of Hygiene and Epidemiology and Kishinev Sanitary Epidemiological Station

"Fermentation Reaction Types and Colicinogenic Properties of Shigella Sonnei Circulating in the City of Kishinev, and Determining Their Sensitivity to Antibiotics"

Kishinev, Zdravookhraneniye, No 5, Sep/Oct 71, pp 7-9

Abstract: The Shigella sonnei strain accounted for 97.9-99 percent of the cases of dysentery in Kishinev in 1968-70. The object of this study was to identify the types of fermentation reactions of Shigella sonnei isolated in 1968-70 (4,507 cultures), and to study their colicinogenic properties and sensitivity to antibiotics. Shigella bacilli isolated from victims in 1968 were found to be primarily fermentation type II (71.4 percent); in 1969-70, type I bacilli predominated (66.4-94.1 percent); Shigella type III was most frequently isolated from the healthy. The results of studies on colicin production showed that, of 922 cultures, 842 were inactive with respect to E. coli K-12 and E. coli B and ϕ ; 76 cultures were colicin type K-12; 4, colicin type ϕ .
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USSR

MARITS, A. A., et al., Zdravookhraneniye, No 5, Sep/Oct 71, pp 7-9

Among the K-12 type cultures, 54 percent were fermentation type I; 44.8 percent were type II; and 1.2 percent were type III. The cultures isolated in 1969 exhibited a gradual decrease of strains sensitive to levomycetin, and a growing number of strains sensitive to neomycin and monomycin.

2/2

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USSR

UDC 616.935:576.3

MARITS, A. A., CHASHCHINA, I. N., CHERVINSKAYA, S. I., BLATNE, M. M., BELYAMOVA, N. S., CHEBAN Ye. D., KORNENAN, A. S., KORNES, R. E., DOBROUSHINA, S. V., GURCHIOGLUYANIS, L. V., and MIKHAYLOVA, A. A., Moldavian Scientific Research Institute of Hygiene and Epidemiology, and Kishinev Sanitary Epidemiological Station

"Enzymatic Types of Sonnei Dysentery Pathogens Circulating in Kishinev"

Kishinev, Zdravookhraneniye, No 3, May/June 1970, pp 48-49

Abstract: The number of Sh. Sonnei strains isolated in Kishinev in 1969 was more than four times greater than in 1959. Many healthy individuals are carriers of these bacteria. A total of 1,714 cultures of Shigella Sonnei were investigated to determine their morphological, peptolytic, antigenic, and other properties, including their ability to ferment sugars to acids. Pathogens were classified into three enzymatic types. Type I -- cultures ferment rhamnose within the first 24 hours of incubation at 37°C, but do not ferment xylose for a week; type II -- cultures ferment rhamnose with a delay (after three to four days), or do not ferment either rhamnose or xylose; type III -- cultures ferment both sugars within the first 24 hours. Of the 1,714 cultures investigated, 71.4% belonged to type II, 21.5% to type I, and 7.1% to type III. The tests are fairly easy and can be performed in routine clinical laboratories.

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1/2 011 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--REACTION OF HEXAMETHYLDISILAZANE WITH BISPHENOLS -U-

AUTHOR--(03)-MIKHAYLOVA, A.N., MORGUNOVA, M.M., ZHINKIN, D.YA.

COUNTRY OF INFO--USSR

SOURCE--ZH. OBSHCH. KHIM. 1970, 40(3), 613-15

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--AMMONIA, ORGANOSILICON COMPOUND, PHENOL, ORGANIC NITROGEN
COMPOUND, ORGANIC SYNTHESIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY RECL/FRA--2000/0890

STEP NO--UR/0079/70/040/003/0613/0615

CIRC ACCESSION NO--AP0124553

UNCLASSIFIED

2/2 011

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124553

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RAPID HEATING OF DIHYDROXY AROM.
COMPS. WITH 25PERCENT EXCESS (ME SUB3 SI) SUB2 NH TO 130DEGREES AND
KEEPING TO ELIMINATE NH SUB3 GAVE AFTER 4-10 HR REACTION:
2,2,BIS(4,(TRIMETHYLSILOXY)PHENYL)PROPANE, 95PERCENT, B SUB1.5-2
173DEGREES, N PRIME20 SUBD 1.5230, D PRIME20 0.9971; 2,2,BIS(4,
(TRIMETHYLSILOXY),3,METHYLPHENYL)PROPANE, 92.5PERCENT, B SUB2-3
192DEGREES, 1.5208, 0.9946;
1,1,BIS(4,(TRIMETHYLSILOXY)PENNYL)CYCLOPENTANE, 80PERCENT, B SUB2-3
208DEGREES, M. 20-1DEGREES;
1,1,BIS(4,(TRIMETHYLSILOXY)PHENYL)CYCLOHEXANE, 83.5PERCENT, B SUB2-3
205DEGREES, 1.5317, 1.0141; 1,1,BIS(4,(TRIMETHYLSILOXY),3,
METHYLPHENYL)CYCLOHEXANE, 94.3PERCENT, B SUB2-3 215DEGREES,--; 4,4
PRIME,BIS(4,(TRIMETHYLSILOXY)BIPHENYL, 89.5PERCENT, B SUB2-3 174DEGREES, M.
59-61DEGREES.

UNCLASSIFIED

USSR

MIKHAYLOVA, A. S.

"A Generalization of the "Fatigue-Rest" Problem"

Mat. Apparat Planov. Raschetov [Mathematical Apparatus of Plan Calculation -- Collection of Works], Moscow, 1972, pp 51-60 (Translated from Referativnyy Zhurnal, Kibernetika, No 1, 1973, Abstract No 1 V693 by the author).

Translation: A "fatigue-rest" model (RZhMat, 1965, 7B367) is extended to the case when the set of states is an n-dimensional simplex, control is fixed by sets of monotonically increasing and monotonically decreasing functions.

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USSR

UDC 621.382.2

BAZSNIK, S.P., VELICHKO, B.V., DRYDC, I.M., MIKHAYLOVA, E.A., STRUMOV, I.A., ETRIN, V.S.

"Experimental Investigation Of The Frequency Dependence Of The Impedance Of A P-N Junction In A Wide Range Of Frequencies"

V sb. Poluprovodn. pribory i ikh primeneniye (Semiconductor Devices And Their Application--Collection Of Works), No 23, Moscow, "Sov.radio," 1970, pp 297-304 (from RZh--Elektronika i yeye primeneniye, No 12, December 1970, Abstract No 12857)

Translation: An investigation is conducted of the frequency dependence of the impedance of a p-n junction in the 10--3600 MHz frequency range. The behavior is observed of such parameters of the p-n junction as total capacitance, conductance, and the Q-factor of the excess capacitance. A comparison is given of the experimental dependences with the frequency dependence of the computed diffusion conductivity of a p-n junction with a retarding field in the base. Conclusions are made with reference to the nature of the impedance of a p-n junction. 3 ill. 1 tab. 5 ref. Author's Abstract.

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1/2 024 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--ABSORPTION OF HALOGEN IONS ON NICKEL IN ACID SOLUTIONS AS INDICATED
BY THE IMPEDANCE MEASURING METHOD -U-
AUTHOR-(02)-MIKHAYLOVA, E.I., IOFA, Z.A.

COUNTRY OF INFO--USSR

SOURCE--ELEKTROKHIMIYA, FEB. 1970, 6, (2), 231-234

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--NICKEL, METAL ELECTRODE, COBALT, BIBLIOGRAPHY, HALOGEN, ION,
CHEMISORPTION, ADSORPTION, BROMINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/0300

STEP NO--UR/0364/70/006/002/0231/0234

CIRC ACCESSION NO--AP0124059

UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0124059

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ADSORPTION OF HALOGEN IONS ON A NI ELECTRODE IN ACID SOLUTIONS (H SUB2 SO SUB4 WITH VARIOUS ADDITIVES) WAS STUDIED AND COMPARED WITH ANALOGOUS EFFECTS ON OTHER METALS, USING IMPEDANCE MEASUREMENTS AS AN INDICATION OF THE PROCESSES TAKING PLACE. IN THE CASE OF BR PRIME NEGATIVE, FOR EXAMPLE, FOR A NEGATIVE CHARGE ON THE SURFACE OF THE ELECTRODE WEAK ADSORPTION OCCURRED, WHILE FOR A POSITIVE CHARGE THIS WAS REPLACED BY CHEMISORPTION. CHANGES IN THE STRUCTURE OF THE DOUBLE ELECTRIC LAYER ACCOMPANYING THE CHEMISORPTION OF HALOGEN ANIONS AIDED THE ADSORPTION OF ORGAINC CATIONS ON NI IN THE SAME WAY AS ON FE AND CO.

UNCLASSIFIED

USSR

UDC 621.791.763.1.04

SLIOZBERG, S. K., MIKHAYLOVA, E. M., and GINSBURG, S. K., All-Union Scientific Research Institute of Electric Welding Equipment

"Selecting an Alloy for the Electrodes of Spot Welding Machines for Low-Carbon Steels"

Kiev, Avtomaticheskaya Svarka, No 3, Mar 71, pp 59-61

Abstract: Results are presented of testing Br. Kh double chromium bronze, Mts5 chromium-zirconium alloy, and Br. Kh chromium bronze with 0.4% Cu and small additions of zirconium and titanium as alloys for the electrodes of spot welding machines for low-carbon steels. The tests indicated that chromium bronze provides insufficient strength, especially at high operating speeds. Small additions of zirconium and titanium improve the plasticity of chromium bronze significantly, especially at increased temperature, where the electrodes operate at a greater welding rate. The addition of titanium also increases the creep strength.

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USSR

UDC 576.858.75(Ao).073.3

PLESHIVTSEVA, V. V., GAVRILOV, V. I., and MIKHAYLOVA, G. R., Institute of Virology imeni D. I. Ivanovskiy, Academy of Medical Sciences USSR

"Further Study of Cultures of Human Embryonic Skin and Muscle Cells Infected With Influenza Ao (PR8) Virus"

Moscow, Voprosy Virusologii, No 5, 1971, pp 579-586

Abstract: A line of human embryonic skin and muscle epithelial cells (HESM_{ep}) and the biological properties of a variant of the influenza Ao (PR8) influenza virus isolated from HESM-PR8 cultures in the degeneration phase (32nd passage, day 210) were studied. (This virus is designated Ao (PR8)_{hesm}). Attempts to detect influenza virus in transformed HESM_{ep} cultures using a variety of methods (inoculation of chick embryos with culture fluid, intact cells, or cell homogenates followed by blind passages in chick embryos, use of parabiotic cultures of normal and chronically infected cells with a medium containing DEAE-dextran and semicarbazide hydrochloride) were futile. Antibodies to Ao virus could not be found in sera obtained by immunizing white rats with a suspension of HESM_{ep} cells. Cultures of HESM_{ep} cells were sensitive to reinfection with Ao (PR8) and to attenuated strains of poliomyelitis virus types 1, 2, and 3. The

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USSR

PLESHIVTSEVA, V. V., et al., Voprosy Virusologii, No 5, 1971, pp 579-586

Ao (PR8) variant isolated from cultures of HESM-PR8 cells in the phase of marked degeneration differed from the original virus in: (i) lack of pathogenicity for white mice, (ii) the ability to cause productive infection of chick embryo fibroblast cultures and to form plaques on these cultures under the agar overlay, and (iii) greater cytopathogenic activity against human diploid cell cultures. There was no reversion to pathogenicity for mice after a series of intranasal passages in these animals.

1/2 026 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--PROTEIN FRACTION CONTENT OF SARCOPLASMA OF VESSEL MUSCLE AND ITS
CHANGES AT HYPERTENSION IN HUMAN -U-
AUTHOR--MIKHAYLOVA, I.A. M

COUNTRY OF INFO--USSR

SOURCE--VOPROSY MEDITSINSKOY KHIMII, 1970, VOL 16, NR 2, PP 148-151

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--HYPERTENSION, RENAL BLOOD CIRCULATION, MUSCLE PHYSIOLOGY,
PROTEIN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1986/0793

STEP NO--U9/0301/70/016/002/0148/0151

CIRC ACCESSION NO--AP0102756

UNCLASSIFIED

2/2 026

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0102756

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PROTEIN FRACTION CONTENT OF SARCOPLASMA OF MUSCLES OF KIDNEY ARTERY IN HEALTHY INDIVIDUALS AND AT HYPERTENSION WAS DETERMINED BY MEANS OF ELECTROPHORESIS IN AGAR. KIDNEY ARTERIES WERE OBTAINED 10-12 H AFTER THE DEATH. IN SARCOPLASMA OF ARTERIAL MUSCLES OF PATIENTS WITH HYPERTENSION AS WELL AS IN THE CONTROL 7 PROTEINS FRACTIONS WERE FOUND. THE CONTENT OF 4 AND 5 FRACTIONS WAS STATISTICALLY SIGNIFICANTLY INCREASED IN PATIENTS WITH HYPERTENSION. THESE FRACTIONS ARE IDENTIFIED AS K SUB1 AS K SUB2 COMPONENTS OF JACOB BY ANALOGY WITH OTHER SMOOTH AND STRIATED MUSCLES. THE CONTENT OF 6TH FRACTION CONTAINING MYOGLOBIN IS DECREASED AT HYPERTENSION.

UNCLASSIFIED

172 012 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--IMPORTANCE OF LOCAL AND COLLECTIVE ELECTRONIC PROPERTIES AND
MODIFIED TITANIUM DIOXIDE IN CARBON MONOXIDE OXIDATION AND IN ISOPROPYL
AUTHOR--(04)--KEIYER, N.P., SAZONOVA, I.S., KHCKHLOVA, T.P., MIKHAYLOVA,

Like
COUNTRY OF INFO--USSR

SOURCE--KINET. KATAL. 1970, 11(2), 447-54

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--TITANIUM DIOXIDE, CARBON MONOXIDE, OXIDATION, PROPANOL, FORMIC
ACID, DEHYDRATION

CENTREL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAHE--3005/0093

STEP NO--UR/0195/70/011/002/0447/0454

CIRC ACCESSION NO--AP0132386

UNCLASSIFIED

2/2 012
CIRC ACCESSION NO--AP0132386

UNCLASSIFIED

PROCESSING DATE--20NOV70

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. THE SELECTIVITY IN THE DEHYDRATION OF SIC PECH AND HCO SUB2 H ON A TIO SUB2 CATALYST DEPENDS ON THE POSITION OF FERMI SURFACE, IN OTHER WORDS, ON THE COLLECTIVE ELECTRONIC PROPERTIES OF THE CATALYST. THE DEGREE OF DEHYDROGENATION SIDE REACTION INCREASES WITH ELEVATION OF THE FERMI SURFACE. IN A CASE OF THE PROMOTION OF THE CATALYTIC ACTIVITIES OF TIO SUB2 (E.G. WITH WO SUB3 ADDITIVES), LOCAL ELECTRONIC CHARACTERISTICS BECOME STRONGER THAN THE COLLECTIVE ELECTRONIC PROPERTIES. ADDN. OF WO SUB3 TO TIO SUB2 DECREASES E SUBA TO HCO SUB2 H AND ISO. PROH DEHYDRATION FROM 28 TO 25 AND FROM 21 TO 19 KCAL-MOLE, RESP. FACILITY: INST. KATAL., NOVOSIBIRSK, USSR.

UNCLASSIFIED

1/2 027 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--IMMUNOMICROBIOLOGICAL INDICES IN PATIENTS WITH RHEUMATISM IN
SEASONAL BICILLIN PROPHYLAXIS -U-
AUTHOR--LABINSKAYA, A.S., PONOMAREVA, YE.P., MIKHAYLOVA, I.N., MALYSHEVA,
E.A.
COUNTRY OF INFO--USSR
SOURCE--TERAPEVTICHESKIY ARKHIV, 1970, VOL 42, NR 2, PP 50-52
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--RHEUMATIC DISEASE, STREPTOCOCCUS, ANTIBIOTIC, PROPHYLAXIS,
ANTIBODY, DIAGNOSTIC MEDICINE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1985/1352 STEP NO--UR/0504/70/042/002/0050/0052
CIRC ACCESSION NO--AP0101897
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0101897

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. THE AUTHORS INVESTIGATED THE MICROFLORA OF THE PHARYNX TO THE CONTENT OF STREPTOCOCCUS OF GROUP A IN 65 PATIENTS WITH RHEUMATISM BEFORE THE BEGINNING AND AFTER THE TERMINATION OF EACH COURSE OF SEASONAL BICILLIN PROPHYLAXIS AND IN 45 THE BLOOD SERUM FOR DETERMINATION OF THE TITRES OF ANTISTREPTOLYSIN-O, ANTISTREPTOHYALURONIDASE AND ANTISTREPTOKINASE. IT IS SHOWN THAT BY THE END OF EACH COURSE OF PROPHYLAXIS A DROP IN THE TITRES OF STREPTOCOCCAL ANTIBODIES AND IN PARALLEL, A REDUCTION IN THE PERCENTAGE IN THE STREPTOCOCCAL CARRIER STATE WERE SEEN. BY THE END OF THE V COURSE IN THE MAJORITY OF PATIENTS THE INDICES OF ANTISTREPTOHYALURONIDASE AND ANTISTREPTOKINASE BECAME STABILIZED DROPPING TO THE NORMAL LEVELS. A COURSE BICILLIN TREATMENT DOES NOT ENSURE PATIENTS COMPLETELY FROM THE RISK OF SUPERINFECTION MOSTLY IN THE FORM OF STREPTOCOCCAL CARRIER STATE. THE LATTER DEVELOPS IN THE PHARYNX USUALLY BETWEEN TREATMENT AND IS ACCOMPANIED AS A RULE BY AN INCREASE OF THE CONTENT OF STREPTOCOCCAL ANTIBODIES IN THE BLOOD SERUM. THUS THERE IS A CORRELATION BETWEEN THE MICROBIOLOGICAL AND IMMUNOLOGICAL INDICES.

UNCLASSIFIED